Indian Horizon

A Miscellany for Indian Youth
to entertain, encourage and
enlighten

INDIAN HORIZON

By
"TAYAB"

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FOREWORD

" INDIAN HORIZON " is an innovation in the Indian book world and, being what it is, a first enquiring flip through its pages might well give the impression that it is a themeless hotch-potch after the style of hundreds of volumes that go out annually in other countries under varied titles. You have heard of bedside books, holiday books, travelling companions and so on. They are there purely and simply to entertain. Similarly, the fundamental aim of " Indian Horizon " is to entertain, but it has nevertheless a clear and definite theme.

There are pages to amuse you, to puzzle you and make you think, and pages which seek to arouse a new interest in everyday features of Indian life—to show you something of the greatness of the Indian sub-continent.

Secondly there is the magic of modern India and the great works that men and women of to-day have seen growing up around them. Here the aim of this book is two-fold. It is to tell the story of some of India's great modern institutions and to tell it in such a way that young men and women who have yet to decide their future may catch here and there glimpses of careers that may fire their ambition or awaken consciousness of individual talents for which there are openings—lucrative openings—in the range of fascinating occupations that a rapidly growing industrial country has to offer.

But do not think that this is going to be a catalogue of industries, a guide to careers, or a list of situations vacant. This has come to you, we trust, as a gift book from some guide, philosopher and friend, and the primary idea is to entertain.

"AND I was stirred by the brave young India waking up to great opportunities and a fuller life."

NANSI G. YOUNG.

CONTENTS

India Calling the World

Growth and Future of India's Great Broadcasting Organization

A MATRONLY woman, with an expressive face bearing a striking resemblance to a former film favourite, shows a group of young artistes into an air-conditioned corridor in a very up-to-date building. As they walk past the half open doors of sound-proof rooms marked " Studio No. 1," " Announcer's Room," " Control Room," and so on, they take in as much as they can of the strange people and equipment about them.

Through an open door they see a group of musicians putting away their instruments. All the usual components of an orchestra—the veena, sithar, tablas and the rest of them—and they and the players look rather strange in a room whose only furnishings consist of several chairs and tables of ultra-modern design and a couple of microphones.

From a closed room come the faint sounds of a jazz band playing dance music and as they pass a glass window they see an announcer making signs through another window to an unseen performer in the studio beyond.

It is all very exciting and new for them, but the greatest thrill of all has yet to come. For they are going to give their first radio performance.

They are shown into a studio where they are given tips on how they are to get through their items. No rustling of clothes and papers, stand just so far from or so near to the mike, and all the other details. And finally they go before the mike for a test, each to say a line or two or to sing or play a few bars while the programme assistant seated in a booth visible through a glass window notes how their voices come over and plays back a recording of it all which greatly interests them.

Soon they hear very faintly the sounds of a familiar march that fills in short intervals between radio items and they know

that in a few minutes their mothers, fathers, brothers and sisters and thousands of other listeners will be hearing them on the radio.

A light goes up, an announcer signals to the producer who bids her unseen audience a good evening. The programme is on the air.

A wonderful experience for the young people of to-day, and still a novelty for most of their parents and brothers and sisters. Yet to-morrow many of these young people may look to broadcasting for the means of earning a living—and an attractive means at that, which will offer big prizes and as much prestige as there is in any of the recognised professions.

For the coming of broadcasting has created a number of new professions calling for education and brains combined with either artistic talent or a scientific bent. As in the case of the moving picture industry and journalism, radio provides a meeting point for the technician and the creative artist. Once again art and the machine are harnessed together to produce something that will delight and entertain and educate people by the million. And though the result may not be as lasting as the printed word or the celluloid record which can be duplicated or seen again and again, or perhaps because of this very circumstance, the standard of efficiency called for in radio is as high as in any other realm of educative entertainment. For only good entertainment will hold the attention of the listener who has always the option of switching over to another station at a moment's notice—an option that is denied to the cinemagoer or to the subscriber to a newspaper.

Different countries have tried different methods for the provision of a broadcasting service. In India after an initial experiment by a privately owned and controlled service, broadcasting became the concern of a department of the Government of India. All-India Radio is thus a state-owned and subsidised organisation which enjoys a monopoly of the right to transmit programmes for general entertainment throughout British India. The fact that it has necessarily to depend on a large number of artistes, speakers and other entertainers drawn from the press, the film industry and the general public and the need for putting on the air topical programmes at short notice as well as feature items to which the Indian public will readily tune in have made it a rather more brisk and enterprising department than most government offices in India. It has now nine different stations (at Delhi, Bombay, Calcutta, Madras, Lahore, Lucknow, Trichinopoly, Peshawar and Dacca). Difficulties in getting

equipment have prevented the opening of two more at Karachi and Patna. Nine of its twenty transmitters are concentrated at Delhi, including two powerful ones of 100 kilowatts each. The annual expenditure of the department is Rs. 48 lakhs.

The personnel of All-India Radio is almost entirely Indian. On the expiry of the term of employment of the first Controller of Broadcasting, the present head of the service took over. His designation has since been changed to Director-General of All-India Radio. He and his two deputies are all Indians as are all the station directors. The Chief Engineer, the Director of News Services and a certain number of persons responsible for programmes broadcast to foreign countries are the chief non-Indian employees of the organisation. All-India Radio's employees, all told, numbered over 1,300 in 1944 and it is likely that the number has increased since with the development of new services.

The staff is of a very varied nature indeed. The heads of stations, or station directors, are largely administrative officers, though some of them have some knowledge of music and experience of the planning of programmes. As it would be beyond the powers of any one man to act as a judge of both Indian and western music as well as talks and features in English and one or more Indian languages, station directors and their assistants have to depend largely on their programme executives and programme assistants, each of whom is a specialist in one or another direction. Then in the studios there are the various technicians at the control rooms who see that programmes are transmitted to the transmitting station some miles away in a locality comparatively free from local electrical disturbances. Also in the studios are units which can go to the scene of any important event to broadcast a running commentary or to make a recording to be put on the air at a later hour. At the transmitter are a whole staff of engineers and mechanics, usually working in shifts over most of the 24 hours.

Most of the staff concerned with the editing and broadcasting of news are centralised under the Director of News Services in Delhi. This is because the English news bulletins and several of the Indian language news bulletins as well are radiated simultaneously from a number of stations. This directorate has expanded enormously during the war and now, in addition to putting out 27 news bulletins in English and in nine Indian languages a day, issues news services in 15 foreign languages to meet the needs of countries bordering on India, particularly those under Japanese occupation. To its organisation of news gatherers

are likely to be added a number of war correspondents in the near future, and while many of its present activities are likely to be curtailed when countries like Malaya, Burma, Indo-China and Thailand are once again free to organise their own radio networks, it is most improbable that the Indian listening public will be satisfied with a return to pre-war services after Japan has been beaten.

Nor should one forget the department of All-India Radio which gives the public news of coming broadcasts. "The Indian Listener" and its four sister publications in Urdu, Hindi, Bengali and Tamil, involve much patient editorial work of a very tedious type. Printed a couple of weeks and more before the programmes they advertise are put on the air, they give as much advance information as possible consistent with the provision of a certain amount of time for topical talks and features.

The daily programme output of All-India Radio has more than doubled since the war began. The average is now 236.5 hours of broadcast items a day. Naturally Delhi, with its impressive concentration of modern studios and transmitters, has a much bigger output than any other station. Even before the war, efforts were being made to develop new services to help to entertain and educate large sections of the public not so far reached by radio. In various parts of India rural programmes were already an established fact, programmes being picked up by radios set up in prominent places in villages and switched on at fixed times to receive a set station. Then broadcasts for school children during school hours made their appearance, with additional features for the young folk at universities. The war saw the introduction of programmes for troops outside India, as well as programmes by Indian troops overseas addressed to their home folk, programmes for British and American forces in India, messages from India to relatives of evacuees in the Far East and other features to brighten the lives of those separated by the fortunes of war from families and kinsmen.

The increase in listening India is reflected in the number of licences in force. Before the war the figure was about 72,000. This has now shot up to well over 180,000 and would have reached an even higher figure if imported radios had been more readily available. One could not properly put down this increase to the improvement in All-India Radio's services alone. Much of it may be due to the presence in India of evacuees accustomed to listening in or anxious to hear the B.B.C. and other foreign

stations. Yet even a figure of 200,000 radios for the whole of India is absurdly low when compared with the radio in every household that one comes across in many countries of the west. A radio in every village alone would mean 700,000 sets for all India and the industry might confidently look forward to marketing two million or more sets as soon as it is in a position to export them to—or produce them in—India.

And two million receiving licences would bring in an annual revenue of two crores of rupees, enabling India to spend four or five times as much as she now does on this useful public service. Future development should not involve a great increase in spending on purely administrative services at the top and the increased spending capacity of All-India Radio will therefore yield a more than proportionate improvement and expansion of its services to the Indian listener. Fifty stations for India are no more than some planners have envisaged. Such a network would give employment to considerably more than five times the present number of employees of All-India Radio, particularly if the task of looking after hundreds of thousands of radios in the villages were entrusted to the technical staff of that body rather than to provincial officials.

One is naturally tempted to ask : " What if television comes to India ? " It is by no means impossible that cheap television sets within reach of the middle class buyer in India will make their appearance in the market within five or six years and All-India Radio will have to be ready with their plans for new services. Not only will this involve new staff and equipment ; it may call for more stations to meet the needs of the smaller areas which televising transmitters will be able to serve, particularly under Indian conditions. And it will present programme executives with new problems—those connected with the photogenic qualities of artistes and speakers and the need for keeping unsightly evidence of prompters, untidy equipment and sheets of manuscript out of the picture.

Another important aspect of India's broadcasting services is contact with the listener. The cinemagoer can go to see the movie his friends or his favourite film critic recommend and the newspaper reader can always change to a different paper when his subscription falls due, but the listener cannot stop paying his licence fee because he is listening only to stations outside the British Indian network. Nevertheless the sensible radio official realises the importance of giving the public the programmes they want. How then are the listeners' wants ascertained ?

The first Controller of Broadcasting in India in a report prepared five years ago regretted that owing to limited funds the whole subject of public relations had not had the attention it merited. That remark is still true, but increased attention is certain to be paid to the subject in the near future.

Occasional questionnaires have been issued to listeners asking for their views on programmes, the language used, preferences in the division of programme time between Indian and Western and between classical Indian and light Indian music. Fewer than half the listeners approached have usually replied and their replies are at times rather surprising. This suggests that a more personal approach to the licence holder is needed and that many new points are likely to be brought out in personal interviews.

At the different stations advisory committees have been set up to help station officials. These consist of more or less well-known local figures. Are they the best judges of public taste in such matters as music, for example? Listeners' views on light music have sometimes been greatly at variance with the more highbrow critics.

Listeners do, of their own accord, write in expressing their views and a study is made of such letters, but the proportion of the letters received to the number of listeners is not very large, and many of the letters may reflect the views of those with an axe to grind.

What each station of All-India Radio needs is a staff of trained observers to go round and interview listeners throughout surrounding districts as well as in the city where the station is located. It may be expensive, but the conviction that an attempt is being made to please the listener will help in the long run to sell more licences.

The time has come for All-India Radio to look forward and to do a bit of planning for the future. To this end it must set about the training of personnel to staff the many radio stations that will come into being in the years after the war. Now is the time for such training. Higher officials know well how much inefficiency flowed from the haphazard recruitment of persons of no definite qualifications in the early days of broadcasting—days when middle-class unemployment in India drove many of the unemployables in other lines to seek godfathers who would help them to find a footing in the new organisation.

At the higher level, facilities ought to be provided for men of education and ability to receive training as station executives and engineers, not only for All-India Radio but also for stations

Your Morning Paper

How a Great Indian Newspaper Is Produced

SINCE midnight he had been watching the smoke-streaked glow dancing and spreading like a gigantic fountain of light behind the ridge 20 miles away across the Himalayan foothills. The wind changed about two o'clock in the morning. Flames bit savagely into the belt of pines that ran from the south-western slopes right up to the beautiful little hill station on the ridge. Only a miracle, it seemed, could save the town . . .

He walked back down the Mall to his office, roused the chaprassie, and uncovered his big, rather ugly-looking typewriter. Fifteen minutes later, a linotype operator in Bombay, 1,400 miles away, was setting the news line by line—

> The great forest fire which
> had already done considerable
> damage along the lower slopes
> of the Himalayan ranges is
> now threatening . . .

Twenty minutes later the great printing presses began to turn like a railway engine warming up, but, very much faster than any railway engine, were soon running at top speed, pushing out their thousands of copies of the morning paper with the news of the great forest fire over a thousand miles away. And while the newspaperman in his remote hill station was still walking back to his bungalow on the khud-side, lorries were rushing the papers to the stations to catch the first trains to the mofussil.

Let us go back to look more closely into this miracle of modern newspaper production. Firstly, the reporter. His first responsibility is to get the news—and get it correctly. But the good reporter, sometimes very often before going in search of facts, makes sure about his communications. How quickly can he get his story to his paper ? In the brief opening story the reporter was lucky. He had one of the finest transmitters electrical

engineering skill has yet produced—the teleprinter. As he typed out his story away up in the hills, it was being told letter by letter on machines in Delhi and Bombay and other centres, where keen newspapermen were ready to pass it on, again by teleprinter, to papers in their area. Reporters have not always been so fortunate in their communications. Even to-day, in many parts, they have to depend on runners, sometimes pigeons—those faithful messengers—to get their stories through in time. Alongside the large pneumatic tubes in some newspaper offices you will still see the very much smaller tube through which the pigeon carriers' messages were once sent from the lofts on the roof straight to the sub-editor's desk.

The reporter's life is a hard, exacting and often exciting one. He is the backbone—his news the lifeblood—of the paper. *To-day's news To-day* should be the motto of every good *newspaper* and it all depends on the reporter. What then, you ask, is a reporter's job worth? It can be worth a very great deal. But in India the rich plums are all too few. Some newspapermen have very attractive contracts and there is bound to be a general improvement in standards as the press in India expands.

Here, as in other countries, journalism is a very open profession. A man may spend a lifetime as reporter, sub-editor, news editor, or editor and usually prefers to be known as a newspaperman. But a youngster just graduated may have an article published in some remote journal and he becomes a journalist overnight. So, if you are determined to make daily journalism your career, start at the bottom. And where is the bottom? There will be sharply conflicting views on that point but I would say it is the job of assistant in the sub-editor's room—not as an assistant sub-editor, but as the most humble helper in that hub of modern newspaper production. Here your job would be to go quickly through every incoming message and see that the right man got it. Home news to the Home Sub-editor, foreign news to the foreign sub, sports to the sports sub and so on—the outstanding items of news to the chief sub or news editor.

Not much of a job, certainly, but it is a beginning, and it will gradually inspire the right type of youth with the real spirit of journalism. In time you will get short news items to prepare for the printer—perhaps a not so important 300 word report of a fire at Nagpur to cut down to 100 words under a one-line heading. This will lead you on to invaluable experience and bring you, in

time, to the parting of the ways. Would you do better as a reporter out in town or roaming the country for news, or as a sub-editor re-writing other people's reports and presenting them in attractive style? Many first-class subs would make hopeless reporters, and similarly, top-ranking reporters might find themselves quite useless at a sub-editor's desk. It is almost entirely up to the individual to decide which way his talents lie.

Let us now go into the newsroom or sub-editor's room which I have called the hub of modern newspaper production. Here stories are pouring in at all hours of the day and night from all over the country, all over the world. Millions of words come in by messenger, post, telegram, cable and teleprinter. A great sorting out, cutting and re-writing has to be done. News has to be graded in importance and presented accordingly. That is the news editor's responsibility. The chief sub-editor usually handles the biggest story of the day, whether it be war, an explosion, a big political development or some outstanding news item of what is called " human interest."

When the news is ready for the press, it goes to the man in charge of another marvel of printing, the linotype machine. I am not going to attempt to describe this amazing apparatus, one of the most fascinating units of a newspaper plant. The operator sits at a keyboard similar to but much larger than a typewriter, taps out the letters and the machine steadily produces the print, line by line in sparkling, silver-like bars of type. When roughly a column length of type is ready, proofs are pulled and sent to the reader. Always pity the poor proof-reader. With many strange markings he draws attention to mistakes. These are corrected by the linotype operator. Proofs are again pulled and copies sent again to the reader as well as to the sub-editor's room. Some proofs may have as many as four or five readings, for, no matter what you may think when you spot mistakes in your morning paper, we *do* try to ensure 100 per cent. accuracy.

On the purely technical side there are still some fascinating stages. Type is assembled column by column to page size. The page of type is then securely locked and sent to a mangle where an impression is taken on a matrix which looks like a large sheet of cardboard. This is a strong but pliable sheet which, in still another machine, conveys the impression of the flatbed of type on to a large cylinder of metal. These cylinders are then clamped on to the rollers in the great rotary press. Highly skilled technicians carry out final adjustments. A final check is made on all vital points. The man in charge calls out

the warning order—" Ready ? "—and with the push of an absurdly small button, the gigantic rotary starts and with fastly increasing speed thunders out its thousands of copies of the morning paper.

As the papers roll off the machine they pass into another vitally important sphere of newspaper production—distribution. You might produce the finest newspaper or magazine in the world, and yet find yourself bankrupt if you have not built up simultaneously an efficient distributing organization. The greater the circulation, the higher runs the advertising revenue, and the bigger grows the margin for expenditure on wider news services and other features. In circulation and advertising there are many attractive jobs for keen young men and women and the more gifted in the diverse arts of salesmanship might well create for themselves well-paid, fascinating positions on the circulation promotion side of India's newspapers. This is rather a specialist job requiring a good working knowledge of the various branches of newspaper production, backed up by sound, practical ideas on how to win wider popularity for the newspaper in the areas selected for sales promotion. The very best idea, the fundamental aim, is, of course, always to get the newspaper to the reader in the quickest possible time. Give him to-day's news to-day. Large sums of money are spent on distribution. Here in India, we are now using air transport for newspapers, and conditions are ideal for this development and increased post-war competition for circulation coupled with the expansion of India's internal air services and the appearance of more and better newspapers will undoubtedly lead to important advances in the production of airmail journals.

References have been made to newspaper advertising. Here we enter a department not of one but of several professions, which may be called, comprehensively, salesmanship. The Chowringhee jeweller, the Hornby Road book-seller, that cloth merchant on the Mall all want people living hundreds of miles away from Calcutta, Bombay and Lahore to know what they have in their shop window—and the biggest show window of all is the page of the newspaper or magazine. Many men are employed in the transfer of the shop window to the printed page. There are artists who design the general layout of the page, who say where the pictures will go and how much space should be devoted to " copy "—that is, the words of the advertisement. Big businessmen with years of experience in selling their wares, often have excellent ideas but it is the job of the layout artist to express

their ideas on paper. A bicycle manufacturer examined a drawing of cyclists pedalling round a racing track—a good picture, but not good enough. " Give me a picture " he said, " of an elephant dangling from a fishing rod fixed to the top of a 100-feet tower ! " The artist was shocked, but the businessman explained : " I want something to catch the eye and make people look."

" But you are trying to sell bicycles, sir, not elephants or fishing rods ! "

" That's just the point. Make the people think of bicycles. Under the picture of the elephant say—" If you went fishing, you wouldn't expect to hook an elephant. But if you went to buy a bicycle you'd most certainly look for the latest model of the famous Raj all-steel bicycle ! "

Advertising is a very big subject and it is going to be an increasingly important profession in India. If you have artistic talents, an eye for design, or the ability to write in vivid, compelling language, there will be a place for you in one of the best-paid departments of advertising. Always remember that advertising and circulation are vitally important to the modern newspaper. There can be no advertising without circulation and unless there is a good flow of advertising revenue no paper can prosper.

Go back to the beginning of the story of newspaper production and think seriously about the hundred and one processes there are in the production of a modern newspaper. Each process has its well-paid job. Which one of the many appeals to you ? Do not lightly discard the possibility of finding a place, a secure and interesting place, for yourself on the technical side of newspaper production. One of the ablest men I know in Indian journalism—and I use that oft-abused term in its widest sense—is a young Bengali who is not a " journalist," but a printer. I would say that he got " print " into his blood when he was still a chokra. And his news-sense is second to none. But he is a printer and his job is to see that the paper goes to press not a minute behind time. Despite his youth, he is a vital key-man. He must save his paper thousands of rupees every month.

My interest however lies chiefly on the side of the journalist. And I see great opportunities for the Indian journalist of to-morrow. Big money is coming into the Press of this country. You will see some astonishing developments within the next three or four years.

Expansion of the Press and the growth of its influence and prestige will open up new fields of work for young men and women

of ability, personality and character as foreign correspondents. Theirs will be a position of high responsibility—to their country no less than to their newspapers. The great capitals of the world will, in time, have their corps of Indian Pressmen, interpreting international affairs to the people of this country and, at the same time telling the world the story of Indian life and work. Theirs will be a task of supreme importance. Only the best of India's journalists of the future will be good enough for appointments overseas as unofficial ambassadors of their homeland. But between the humble reporter on the small provincial weekly paper and the special correspondents in London, New York, Moscow and Paris, the Indian Press of the future will offer a wide range of employment for live young men and women who are prepared to begin at the beginning and make a really serious study of the fundamentals of newspaper production.

Excellent advice was given in a recent article in an Irish College year-book on this subject. The writer, obviously a newspaperman of wide experience, said :

"The expert knows; the journalist finds out." If to this *bon mot* is added the information that the journalist—having found out what he thinks the public wants to know and having judged rightly that they do want to know it—transmits the information attractively and accurately the resulting description is the best that I can frame as a starting point.

Comparatively few men or women are educated specially for journalism. Not alone are very few people educated specifically for journalism but many journalists—good journalists—of my acquaintance came into the craft as an afterthought, having tried something else first. In not a few cases what they tried was secondary teaching.

Professional readers of this article will, however, do well to banish from their minds the temptation (at least under present conditions) to leave a moderately heated frying-pan for a by-no-means-comfortable fire. Of the successful journalists who never worked at anything else—that is, who always made their living by writing for or editing newspapers or periodicals—the best have come in at the bottom and worked their way up ; and the bottom in journalism is very far down.

One of the best journalists I know came to journalism by way of a primary school, labouring work in a factory, work on a railway and a period as a trade union official.

We have not had much opportunity of assessing the merits of education as a factor of success in journalism. At the same

time it is possible to indicate to the teacher how best to set his charge on the right road, to say what that road is, and then to tell him that when the teacher has done all he can do, the rest will depend on stamina, which cannot exist apart from enthusiasm in the aspirant himself.

Remembering our opening quotation we will not attempt to prepare our candidate for journalistic honours by spending six years cramming his head full of facts, not even with what are called useful, that is to say, contemporary, facts. These will be all out of date by the time he gets a job. Rather must he be taught to seek out knowledge. I should much prefer the reporter who had not the foggiest notion where Dutch Guiana was but who had the gumption to look it up in a gazetteer before he wrote his story, to the first class honours man in geography who was so confident of his own knowledge that he would airily and carelessly place it East of Suez. Similarly, the reporter or sub-editor who is not too self-conscious to use a dictionary is preferable to the genius who "can spell everything." The dictionary in this matter is infallible.

Teaching a boy for journalism is largely a matter of disciplining and training a mind which has already shown signs of imagination, resource, and creative ability. A good groundwork in English, the first essential raw material of his craft, is the starting point. If, as we hope, he has shown signs of a latent power of expression he will have to be taught to write simply and to the point, to prefer the short word to the long word except where accuracy demands it, and he must be taught to read over everything he has written to see if he can take anything out without damage to the structure of his composition.

I believe it is unpopular at the present time to advocate the teaching of the classics. Yet nowhere is the sense of form which goes to the making of first-class journalism, whether in a short news paragraph or a long leading article, so easily absorbed as in the study of the works of the Greek and Roman masters.

In a world in which communications are rapidly improving, the newspaper reader, radio taught, is beginning to look for more and better articles and news on foreign affairs—apart altogether from wars. The journalist does not need a knowledge of science or mathematics. On the other hand, anyone who has tried to write an independent "story" out of an official issue of trade or social statistics will realise the advantage of a sound knowledge of arithmetic. There are, it is said, "Lies, damned lies, and statistics." To be able to circumvent the designs of tendentious

statistic-mongers good practice in the art of addition and subtraction is invaluable.

The best point of entry into journalism is undoubtedly as a junior reporter on one of the many provincial newspapers. Here a knowledge of shorthand is essential and the ability to use a typewriter a great advantage. These are arts which the mentor of the aspiring journalist is not called upon to teach but he can at least advise his pupil who has successfully completed his secondary school course that the time spent in acquiring them will make his path much easier.

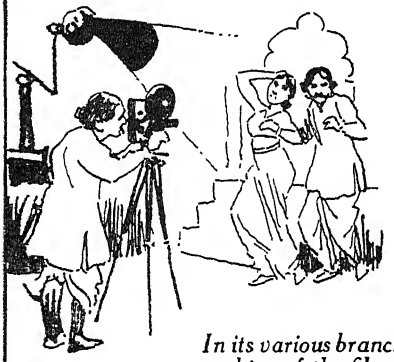
After matriculation, if he can go to the University so much the better, though he will not feel the benefits of his University course until he has passed out of the junior grade of his craft. What course he takes depends on his own taste, but languages, philosophy, history and economics have obvious advantages. But he will be well advised to start as near the bottom as he can get in, if indeed he can get in at all.

Finally, the teacher will gain later gratitude if he warns his favourite pupil against the perils and heart-breaks of attempting to enter journalism by striding easily over the far green hills of free-lance writing. That method is as out of date and just as useless as the two-column leading article.

What the teacher can do is to exercise his influence on the proprietors and editors of local newspapers to give the young men and women upon whom so much valuable time, patience, scholarship and energy have been spent the chance to make a start in a career which holds great potentialities for good or evil in the life of the nation.

INDIA'S EIGHTH INDUSTRY

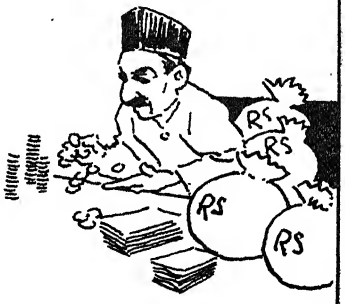
INDIA has about 1,500 cinemas, the great majority of them showing pictures made in this country. Film production now ranks as India's eighth greatest industry. It has a tremendous future.



Films made in this country may one day be shown all over the world. It is not a new industry for India. The first Indian picture was made over 32 years ago. Great developments are expected in the post-war period.

In its various branches—for the actual making of the film is only one branch —the industry now gives employment to thousands of people.

Financially, what does India's film industry mean to the country? In Entertainment Tax alone it is paying well over Rs. 40 lakhs a year—and there are the other taxes paid by people who make their livelihood in films.



KNOW THESE WORDS !

1. *Farina :* the name of an Egyptian princess ?
   a card game ?
   a colour ?
   flour ?
   bashful ?
2. *Eliminator :* electric gadget ?
   copper coffee pot ?
   the head-piece of a diver's suit ?
   remover ?
   inventor ?
3. *Sconce :* bracket-candle stick ?
   the head ?
   small fort or earthwork ?
   inflict forfeit ?
4. *Misanthrope :* moon as seen in the first quarter ?
   ape-like ?
   a collection of odds and ends ?
   hater of mankind ?
5. *Rococo :* chocolate drink ?
   range of mountains in North America ?
   florid ?
   species of gigantic bird ?
6. *Parlous :* old-fashioned sitting rooms ?
   an apology ?
   embarrassing ?
   umbrellas ?
   a foreign language ?
7. *Charlatan :* a French castle ?
   a pudding ?
   an impostor ?
   young partridge ?
   officer's horse ?

(*Answers on page 121*)

Making Indian Films

Meeting the country's great demand for entertainment—and education

" SILENCE—Sound rehearsal ! " An electric bell rings. Slowly the noise of carpenters and coolies at work, and of technicians and actors chatting dies down. The big fan which makes existence on the studio floor possible, although it only blows the hot air and dust about, is switched off. The studio doors are closed. And as one light after another goes on, the " set " emerges from the semi-darkness.

The scene is a drawing room in an Indian family. In order to permit camera movement, but mainly because it is still a tradition in Indian films, the set is over life-size and decidedly too "richly" furnished, to represent what it is supposed to do. But this is, of course, a fault from which most of the American and British films suffer just the same. The actors are seated around a table. The camera, mounted on a small trolley, is being pulled backwards ; the microphone, suspended from a boom over the heads of the actors, turns from one to the other as they speak. The technicians, actors and director concentrate on their work while the score of others who go to make up a team, relax.

The dialogue and action over, the camera is pushed back into the first position ; the director gives a few last-minute instructions to the actors ; then : " Silence—we'll take it ! "—and another few feet of celluloid are exposed and added to the thousands that daily go to make up the " Glamour of the screen." The scene is essentially the same in any other studio in the world. True, the studios in India are not properly sound-proofed. In this climate, moreover, they should be air-conditioned. From corrugated iron or cement roofs, sacking is suspended to prevent echo—but it harbours pigeons that have to be chased out before " takes," and collects unlimited quantities of dust. In addition to lots of doors and other openings, big fans, blowing the hot air and dust about, are not exactly ideal working constituents. The equipment, too, though modern, is scanty,

especially as far as lighting and cameras are concerned. The sets and properties will still have to be considerably improved to approximate verisimilitude. But, in principle, there is everything modern studios have anywhere else in the world, and it seems only a matter of time until the differences are levelled out.

But is it only a matter of time ?

" Isn't there enough capital to bring studios up-to-date ? "

" Well," a producer-director answers, " I suppose there is. But even if people were willing to sink it into such long-range investments, it couldn't be done until after the war. The combination of producer and director is, by the way, much more common in India than abroad. It is only recently that directors, and then only the most important of them, in America have been able to form their own production units ; and, needless to say, this is in principle an excellent thing as it allows the real creator of the film a liberty he hardly ever enjoys otherwise.

" And, frankly, even if it were possible to-day, I don't know of anybody who would invest heavily. Everybody wants to make as much money as quickly as possible. That's the trouble with this industry. It always has been . . . "

" But with all the apparent difficulties like shortage of raw film, replacements of equipment, etc., does the industry stand to make money at all ? "

" More than ever, strange as it seems. The increase in the spending powers of the population has created an enormous demand for entertainment. Hence, in spite of factors like the scarcity of materials, and vastly increased overheads, caused by higher studio rents and higher salaries, the number of pictures turned out has actually increased since the outbreak of the war. True, the number of cinemas has not increased appreciably, but completed films are bought at high prices all the same, even if they have to remain shelved for the time being. So that in spite of greatly increased production costs, pictures are a very good business proposition."

" In that case, actors, actresses and technicians should be doing very well ? "

" Yes. It does mean contracts to well-established actors and actresses which a few years ago would have seemed utterly fantastic. Rs. 30,000, Rs. 40,000, even Rs. 90,000 and over per picture—more than the pre-war production cost of an entire film—are not so exceptional to-day. This, of course, is one of the main items that go to bring the cost of a film to an average of Rs. 4,50,000 to anything up to Rs. 12,00,000 to Rs. 18,00,000—

fabulous figures for pre-war Indian films. In addition, most of these people are working on more than three films at the same time—some even up to five, six and more. This is an extremely bad practice from every point of view, and it is only now during the war that it is being carried to these heights of absurdity."

" As to the technicians, the general level of their salaries has risen, like everybody else's. They are still underpaid, though, if less so than before the war, when a good sound or camera technician would stay at Rs. 100, Rs. 150 or Rs. 250—with a few exceptional salaries of, say, Rs. 500 or Rs. 600—for a long time. Nowadays anybody would start off with Rs. 150, purely because of the rise in living costs, which have gone up in ever greater proportion. So that although there may be a few top salaries of Rs. 1,500 or Rs. 2,000 a month, the average technician's pay is still low, considering the work he does. This, of course, does not apply to the directors."

" With the salaries mentioned by you, it would be interesting to know whether the development of the ' social ' life of the actors tends to follow the Hollywood pattern . . . "

" I know what you mean. No, I don't think so ; but if the money earned is not spent on ' conspicuous consumption,' it is probably more because things like houses, cars, and a lot of other luxury items are simply not available now. Admittedly, a number of them squander their money on racing and gambling. Most of the Indian screen artistes, however, continue to lead the same simple life they used to lead when they were earning a tenth of what they are making now. And although with the extraordinary variety of types that go to make up this category it is dangerous to generalise, one might say that the very strong influence of the family in Indian life, does have a very steadying effect in this respect."

" How does the situation affect the extras ? Do you think there has been any change in that strange state of confusion that used to exist with regard to their status ? "

" No, I think one can say that *their* daily rates, too, have risen. While before the war Rs. 2 to Rs. 3 was quite usual, they now start with Rs. 3 to Rs. 5 to Rs. 25 for men and Rs. 5 to Rs. 50 for women. But, extraordinary as it may seem to European and American eyes, there still is no such thing as a properly organised casting agency anywhere in India, and what you'd call ' extras ' proper are still recruited more or less haphazardly through middlemen or some sort of contractors. These people, who used not even to have an office, take from 30 per cent. to 50 per cent.

and more, and some contractors now earn as much as Rs. 5,000 a month. Here, too, there seems to be an amazing lack of initiative."

"What about newcomers? Their prospects should be good?"

"Yes, but they will be much more so after the war. You must understand that, with the money involved in production, producers, always a bit conservative in this respect in India, are at the moment, especially reluctant to take any risks. That is why experienced actors and directors and, occasionally, technicians are being paid so much. But younger people do get their opportunities all the same even now, and then usually get on all the quicker once they're 'in.'"

"And I suppose the tendency to recruit actors and technicians from the better classes—a tendency quite strong before the war—continues?"

"Very definitely so. The prestige of the profession is getting nearly as high in India as it is abroad. And of course not only the glamour, whatever there is of it, but also the financial aspects are a big attraction . . ."

"Is it not a pity there isn't a proper training centre?"

"I quite agree—and perhaps still more so now that production is, after all, more limited and exclusive than it will be after the war. Yes, there have been various attempts to create a central training centre, but so far one can hardly say that they have been more than efforts to recruit new, inexpensive talent for a producer or a particular group of producers."

"Don't you think that a Film Institute, sponsored by the Government, is the only answer? There must be a Film Library containing books and all outstanding films from all over the world, quite apart from a collection of all Indian films of historical interest. There must be a complete staff of experienced instructors in touch with all the latest developments in the industry abroad, so that all the various branches of such a complex industry could be kept thoroughly up-to-date and taught—from script writing to make-up, from set-making to direction, from recording and camera work to acting, from laboratory work to editing . . ."

"I quite agree. Only when it is built on solid foundations—and an Institute of the kind visualised by you, with enthusiastic, idealistic, uncorruptible teachers, not influenced by interests in the film trade, would go a long way to building such a foundation—will the general standard of the film improve."

" But from all you say, it seems a foregone conclusion that there is a big future for the industry in India. What about foreign markets ? "

" Not very likely to be in any way comparable to the home market. While it will be possible to have an ever increasing home consumption until most of the 400 million will be able to see films, the number of Indians, even in Africa, is insignificant as far as big money in films is concerned."

" But for ambitious and well-made films there is bound to be a certain interest abroad after the war, and even now ? "

" True enough, but then our standard, even that of the ambitious productions, will still have to be much improved if they are to have more than just a curiosity value. For let us not fool ourselves. Even our ambitious productions are still too *jejune* in subject matter as well as in treatment ; and I'm not even talking of the efforts at English-speaking productions which are now increasing. They will not, I think, achieve any great success for a long time to come. But with the tremendous possibilities that a country like India offers, the short film might well have considerable success abroad."

" You mean the documentary ? "

" Yes. The continuation and expansion of what the Information Films of India are doing now, plus, I hope, dozens of small concerns with enterprising young men and women not primarily interested in money. It is quite possible that, as in England, the best brains and the greatest talent will go into documentary film production. Maybe they, too, will have to be sponsored by far-sighted industrial concerns and by Government until they have created a market of their own. But, although conditions are very different, more complicated and, I'm afraid, more adverse here than they were in England, there is no reason why it should be assumed that it is impossible to establish the documentary film in India ; and this will certainly have a market abroad."

" What attempts have so far been made ? "

" Well, there is of course the I.F.I. Started at the beginning of the war in the face of great opposition, and passing through various stages, it seems to have settled down and found its feet in the last two years. This is largely due to the fact that the standard, as a whole, has kept on rising. It has done very valuable work in getting people interested in short films about themselves and their country and it seems it will be doing some still more valuable work by a far-sighted policy of training young

people in their jobs, and by preparing invaluable post-war reconstruction films.

" Then there is the Indian News Parade which, after all, started entirely from scratch and did manage, right from the beginning, to turn out an issue each week—no small achievement. It, too, has vastly improved in quality. This interesting film innovation will be responsible ultimately for turning out a number of young men who have thoroughly learned their jobs in a most important branch of film production. Quite possibly a number of them will join up with the documentary movement.

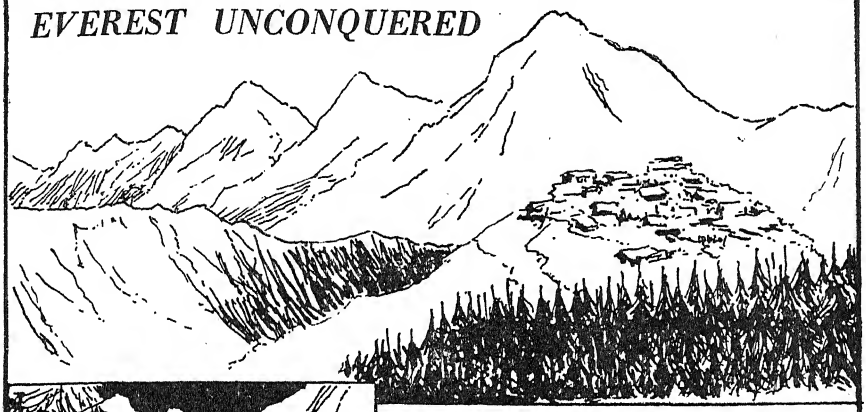
" Then there is already quite a large organisation, working in 16 mm.—or reducing to 16 mm.—with its own distribution and market, quite ready to increase rapidly as soon as the war is over. So far its work has been mainly educational. It would be very desirable if it stuck to it; its mobile units have access more easily to the so far filmically untouched, remote parts of the continent, and the good it could do in educating and generally spreading information is of inestimable value to the welfare of the country. However, all signs seem to indicate that the lure of big profits will make them concentrate on entertainment to the detriment of educational films. But with a development of the documentary there is just a possibility that in spite of the money-grabbers' invasion and exploitation a great amount of good will be done in this field.

" Finally, there are the manufacturer-sponsored films. Here too a big development may be expected. Even before the war, some of the more advanced firms were more than just interested, and a few advertising films were produced; at the beginning of the war, a further few turned to public-relations films. So, you see, within all the various branches of film production there is going to be a big scope for enterprising men and women; but, if these opportunities are not to be spoilt by big business and personal interests, they will need a certain protection. Far-sighted subsidies, regulations, enthusiasm and a lot of hard work will be necessary, if the tremendous possibilities that the film industry has to offer in this country are to be realised, and if the very great social responsibilities the film industry has in all its varied forms are to be fulfilled.

" Excuse me now—but I've got to be off again—they're waiting for me on the set . . . I hope I haven't been day-dreaming . . .

" All right—everybody ready ? Sound ready ? Good ! Camera ready ? Right ! All lights on ? Give the silence bell—Fan off ! Silence ! Camera ! "

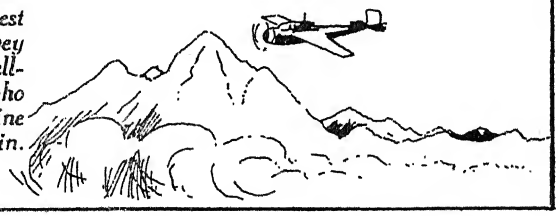
EVEREST UNCONQUERED



IN the past eighty years of Himalayan mountaineering only two summits have been reached. They are Kamet and Nanda Devi. The great Everest, the world's highest peak, remains unconquered.

Many brave men have lost their lives on Everest expeditions. In the expeditions organised in 1924 and 1933 mountaineers got to within 1,000 feet of this 29,141 feet Peak. Himalayan climbers pay warm tribute to the "Tigers" of Everest, the Porters, brave sturdy little men, good companions and intrepid mountaineers.

The only successful Everest expedition was the air survey undertaken in 1933 by well-known British airmen who brought back some fine photographs of the mountain.



Magazine Miscellany

ONE of the most fascinating of India's modern museums is the New Delhi collection of rare postal curiosities and antiquities, old and current stamps, curiously addressed envelopes, and models of post offices. The stamp collection, estimated to be worth well over four lakhs of rupees, includes the earliest stamps issued in 1852 for use in the province of Sind. These stamps had a short life of about two years and they now rank among the great rarities sought after by stamp collectors the world over. The development of the printing and design of stamps since their first public use in India in 1854 is illustrated in a collection which contains every stamp issued from that date up to the present.

* * *

The first stamps to be produced in India were the red half-anna stamps with a 'lion and palmtree' design. Only nine hundred sheets were printed but the stamps were never issued because the stock of vermilion colour used in the printing ran out. The finally accepted design was a blue stamp of 8 arches. The first watermark was the elephant's head, later replaced by the five pointed star in 1866. The first issue of stamps was made at Madras on September 15, 1854, in the denominations of ½, 1, 2 and 4 annas. Till 1926, the stamps were printed by De La Rue and Company of London. Since then they have been printed in India at the Security Printing Press, Nasik. Stamps continued to be printed with the inscription "East Indian Postage" till 1882, when it was changed to "India Postage." There is a complete collection of British Empire stamps including "the first and finest stamps ever made in the world," namely, the 1840 British one-penny stamp and the "I.R." official stamps of £1 denomination, now quoted at £200.

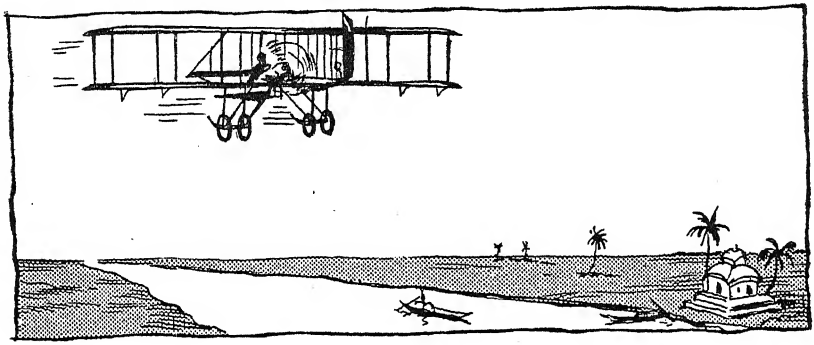
A remarkable and rare photograph is that of Sir Rowland Hill, the founder of the penny post and the "father of the modern post office system." This photograph was secured by Sir Gurunath Bewoor in 1930 when he was Postmaster-General, Bombay, from Col. Berkeley Hill, I.M.S., a grand-nephew of Sir Rowland.

The gleaming and massive tusks on show, remind one of the elephant Kyaw Hla, a faithful servant of the Department for

eighteen years. A glass case contains many small articles such as curiously addressed envelopes, interesting contents of dead letters, etc.

* * *

Among the collection of numerous interesting covers in India's postal museum is probably the " first air mail " envelope in the whole world. The famous Allahabad Exhibition was held as far back as 1911 and the Indian Postal Department was able to



arrange an air service from Naini to the Exhibition, across the Ganges. The envelope is dated Allahabad February 19, 1911, and signed by Becquet, the French pilot who flew the aeroplane.

A postcard containing no less than 30,000 words suggests what can be sent for a few pies by the economically-minded. Another envelope bears merely the addressee's photograph with the name of the town underneath : yet it was promptly and correctly delivered.

A message from the Dalai Lama, on the occasion of the opening of the telegraph line constructed by the Indian Posts and Telegraphs Department in 1933 to Lhasa is on view, it bears the holy seal of the Dalai Lama.

* * *

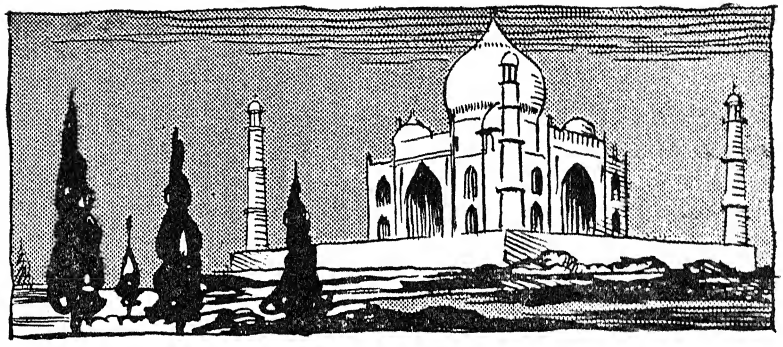
Although ordained by Nature to flow into the Arabian Sea, a river in Madras has been diverted by human ingenuity into the Bay of Bengal. A huge dam across an inaccessible gorge in Travancore about 3,000 feet above the sea, in malaria-ridden jungle forms a picturesque lake set in the hills. This is the Periyar Lake. A tunnel 5,700 feet long, has been bored through the eastern ranges of the hills to carry the waters of the lake to the plains of Madura.

The dam is of concrete and is about 170 feet high above the river-bed at the deepest point. From the tunnel, water is let into the Surulaiyar, a tributary of the Vaigai. After irrigating about 12,700 acres in the Surulaiyar valley it is again picked up at the Peranai regulator across the Vaigai about 80 miles downstream of the tunnel and flows into the Periyar main canal about 35 miles long.

The system irrigates about 133,000 acres in Madura district.

* * *

Who designed India's famous Taj Mahal? According to Mr. C. S. Srinivasachari of Madras there are some critics who say that the actual designing of the Taj and the carrying out of its decorations were done by a Venetian who was residing at the Mughal capital at the time. But Mr. Srinivasachari says it has been proved beyond doubt that all the artists employed in the construction were Asiatics; and there has been found no indication of any European intervention. The Venetian artist, spoken of above, was invited as other artists were, to submit designs for the mausoleum. But the plan that was finally selected was prepared by Mughal builders. Expert craftsmen from the most famous art-centres of India were employed in the work; besides these, noted caligraphists from Persia and Iraq were invited to see that



all inscriptions were correctly carved or inlaid. An expert in dome construction came from Turkey; a pinnacle-maker was invited from Samarkand in Central Asia; and an experienced garden planner was secured from somewhere else. The chief supervisor who co-ordinated the entire work was one Ustad Isa, a Persian, who was famous as the best designer of the time. It should be noted that, while the building portions of the work

were constructed mainly by Moslem artisans, the decorative aspects, and particularly the work of preparing the *pietra dura* for inlaying, was mostly done by Hindu craftsmen belonging to a particular clan in Kanauj.

* * *

If you were told that a certain person was (1) a phillumenist and (2) he paid as much as Rs. 5 for an empty match box, you would probably jump to the conclusion that phillumenist was just another word for lunatic. The phillumenist would be most indignant. His is a hobby which has thousands of devotees. It is collecting matchbox labels. Are there any phillumenists in India ? This country can certainly show an attractive variety of matchbox labels, and it is not unlikely that some people have made a hobby of their collection.

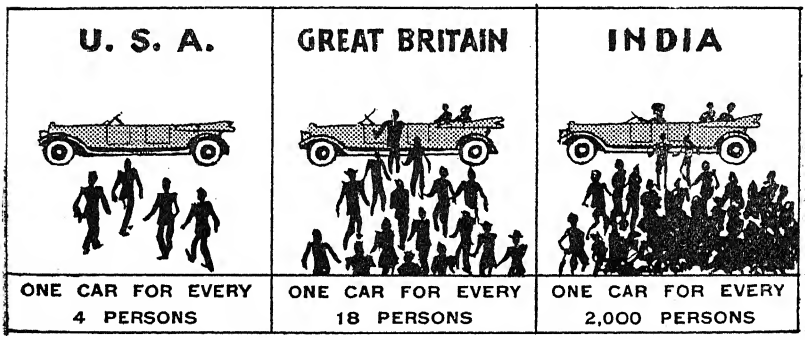
The shortage of matches in Europe has increased the value of all matchbox label collections, and collectors are offering good prices for boxes in good condition which were made in France as a result of the German occupation.

There are about 5,000 collectors in Great Britain. One collection contains about 35,000 different labels. The price of a rare label about 40 or 50 years old is about Rs. 3 to Rs. 5.

As with stamps, matchbox labels which are withdrawn, banned or have a short life for any reason, have a scarcity value.

* * *

The motor trade entirely depends upon rubber, and rubber producers almost entirely depend upon motor companies for



profit. The total number of motor vehicles in use in the United States of America runs to 30,000,000, and one in every four persons has a motor-vehicle. Great Britain has 2,500,000 vehicles, one for 18 persons ; France, a little less for the same proportion ; Germany, used to have nearly 2,000,000, one for

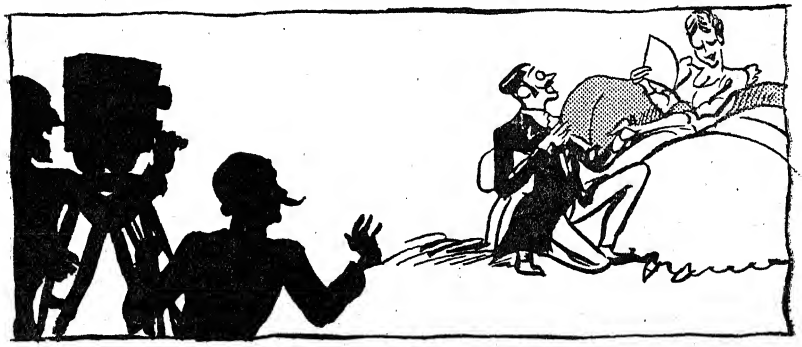
every 42 persons ; Canada, 1,500,000, one for every eight persons ; India comes last with about 185,000 vehicles, that is one for as many as 2,000 persons. Look at the manufacturing capacity of various countries. America produces 3,500,000 a year, but other countries are far, far behind. Great Britain produces about 500,000 a year, France—not now I suppose—220,000, Canada 155,000 and the U.S.S.R., 215,000. The total number of motor vehicles manufactured in a normal peace-time year is about 500,000 and they require an enormous quantity of rubber, consuming as they do, three-fourths of natural rubber which is exported.

* * *

Films made their first appearance as a medium of public entertainment as long ago as 1894.

What were the early films like ? In the first place, they were the shortest of short subjects. None of them used more than 50 feet of film. One of the earliest of the subjects to be photographed was a sneeze. Fred Ott, an employee in the Edison laboratories, had something of an office reputation for the unrestrained enthusiasm of his sneeze. Not only that, but pictures which have come down to us show him to have been a man with a luxuriant handle-bar moustache, a photogenic asset which was not overlooked by these pioneer producers. Ott was persuaded to perform before the camera. But even at the dawn of the movies temperamental difficulties arose. Ott was willing but his sneeze was not. Finally, the desired reaction was coaxed out of him and a film was made.

About 1907 American producers discovered the climatic advantages of southern California as a place for cinema making, and the migration began which was to turn Hollywood into the



film capital of the world. But before then significant technical advances had been made in the lustily growing industry. One of the pioneers was George Melies, who discovered the entertainment value of trick photography and captured public attention with a film, " A Trip to the Moon," 825 feet long, three times the length of the average movie at the time.

In 1903 Edwin S. Porter set another marker in the march of the movies with " Great Train Robbery." It is still preserved and occasionally shown as a curiosity. Its place in screen history depends on its recognition as the first " story picture."

David Wark Griffith brought new technique to the films through his development of the use of the close-up, the fade-out, and the flash-back. And in " The Birth of a Nation " he startled the entertainment world with a super-feature which could provide a full evening of entertainment in itself. But that was not until 1915.

The revolution brought by " talkies " in 1929 and the more gradual development of colour are chapters in the annals of the screen. They are amazing enough but no more so than the growth of the industry itself from its small beginning 50 years ago.

* * *

During the siege of Paris by the Prussians in 1870, a French photographer printed messages on large sheets and photographically reduced them in size until a film containing 3,500 letters could be conveyed by a carrier pigeon. In 1925 a banking official devised a highspeed mass-production method for photographing cheques. Sponsored by the Recordak Corporation, a subsidiary of Eastman Kodak, his invention has consistently enlarged the sphere of its usefulness. But it was not until Pearl Harbour that the science of microfilming achieved recognition as a vital tool for victory.

Microfilming is the compressed recording of essential documents on strips of permanent non-explosive film. Pictures are taken on 16-mm. or 35-mm. rolls, similar to those used in typical candid cameras, and every page photographed is reduced to the size of a postage stamp or less. Afterwards, for consultation purposes, the spools are run through reading machines which enlarge the microfilms to full size or larger. Or, if desired, facsimile reproductions of the original document can always be made from the microfilm negative. This was the forerunner of the airgraph now used so widely in India.

Microfilm can safeguard a nation's culture by preserving books, music and paintings for posterity. A microfilm book is merely

the result of photographing consecutively each page of an ordinary printed book. Afterward, reading machines enlarge these micro-copies to full size or larger. This canned literature is of the utmost importance. Recently the Chinese government sent 3,000 of its rarest volumes for safekeeping to the U.S. Library of Congress, and for the duration Chinese scholars will have to content themselves with studying the micro-copies on reading machines.

Music and painting are similarly indebted to this process. When Toscanini decided to play the war symphony of Shostakovich, the famous Russian composer, microfilm recorded the entire orchestration on more than 2,000 prints, which were taken to America by aeroplane.

* * *

The housewife of ancient times probably laid the foundation of our present day soap by mixing goat's fat, bone grease, and olive kernel oil with wood ashes for her adornment. The ancient Indians used barks, leaves, pods, pulses, seeds, nuts, oilcakes and soap-nuts, and produced all the attributes of a well-made modern toilet soap. Soap was also known in Europe as early as 1500 B.C. Amongst the ruins of Pompeii, destroyed by the eruption of Vesuvius in A.D. 79, remnants of soaps are said to have been unearthed.

This rapidly developing industry of India had modest beginnings. As recently as 1879 a small soap factory was started in Meerut for local consumption. Another factory was subsequently set up at Calcutta by the same firm. These factories had a chequered career, but now British India and the Indian States are estimated to be producing about 75,000 tons of soap yearly from nearly a thousand large and small factories, to a total value of Rs. 34,250,000 per year; 50,000 tons are household soaps valued at Rs. 2,00,00,000; 15,000 tons are toilet soaps valued at Rs. 1,12,50,000; 10,000 tons are industrial soaps valued at Rs. 30,00,000.

* * *

An early copper-plate dated 169 Gupta era equivalent to 488 A.D. is in the Archæological Section of the Indian Museum, Calcutta. It was a gift from Mr. Ganapati Sarkar, Zamindar of Beliaghata, Calcutta.

In these copper-plates are often found details of the constitution of the town councils of those days. They were evidently strong representative bodies, wielding great power. A Town Council, it appears, consisted of the Ayuktaka or the district officer and the Nagarasreshti, chief merchant of the town, the Prathamakulika,

the leader of the artisans, the Prathamasarthavaha, the leader of the caravans engaged in transport, the Prathama-kayastha, the first amongst the scribes.

The gold coin used in the Gupta period was called the dinar (the Greek dinarius). Further, some of the terms used for the measurement of land are common even to-day. The usual practice in those days was to measure the land not by a unit of area, but by a unit of corn which could be sown over a given area. One such measure was known as Kulyavapa which meant the area in which one *kulya* of corn could be sown. The word Kulya still persists in Bengal in its modern equivalent *kura*. Again, another land measure of a similar character is the *dronavapa*, an area in which one *drona* could be sown. The word is found in use even now in as far off regions as parts of Eastern Bengal and the Punjab State of Chamba in the bosom of the Himalayas, testifying once more to the fundamental unity of Indian culture.

* * *

About 100 years ago, Edgar Allan Poe wrote a small book of poems which he called *Tamarlane*. No publisher would take it, so he had it printed at his own expense.

He printed 500 copies and sold ten. Where the other copies went to, no one knows. But if you have a copy, you can sell it for the price of a big house.

In recent years, eleven copies have been found, and they have been sold for as much as £5,000 a copy. Every second-hand bookseller has hopes that some day he may find a *Tamarlane*.

To-day millionaires are scrambling for the little book of poems which he had to publish himself, and which no one in his day wanted to buy.

* * *

Chopin, always an invalid, lived only 39 years, yet he left

800 pages of musical composition behind him. In four years he wrote 53 of his greatest compositions.

Zola, during his early, penniless days in Paris as a young writer of verse, sold his coat and trousers and lived in an unheated room with only a bed sheet to clothe and keep him warm. He set traps on the roof for sparrows, and when he was lucky enough to catch one, he attached it to the end of a curtain rod and broiled it over a candle flame.

Vincent Van Gogh, the Dutch painter, sold only two paintings during the 37 years of his life, and these two sales brought him but £21. To-day his bright, warm canvases are worth many thousands of pounds apiece.

* * *

Foresight is your ability to foresee into the future and prepare for it. This quality, in others, is known as hoarding.—*P.M.*

* * *

When a person is not "up to the mark," he, or she, resembles an inferior piece of silverware which does not come up to the standard set by the Assay Office, and thus is unworthy of being hall-marked. But "beside the mark" has a different origin altogether. In archery the mark was the target; and an arrow that landed beside it instead of on it resembled an observation which has no reference to the matter in hand.

Many common phrases have their origin in games and sports. "All at sixes and sevens" recalls dice-throwing; and "I can't make head or tail of it," the similar pastime of tossing coins. To say a man is "game" recalls cock-fighting; so does "to show the white feather," for cocks of an inferior strain, and unlikely to show good sport, were supposed to have a white feather in their tail.

"In the swim" is from the anglers' pastime. A stretch of water in which many fish are likely to be is called a "swim" by the brothers of the rod; so to be "in the swim" as applied to humans, means to be mixing freely with one's compeers. "Winning hands down" comes, of course, from racing, for a jockey who finishes with his hands down has had an easy race.

* * *

In a world of newly-invented substitution, no satisfactory substitute has been found for the mineral mica. Air supremacy rely on engine and radio efficiency. Engine and radio efficiency depend on mica. Mica is essential because it combines qualities which are not found together in any other known material. It splits to sheets a thousandth of an inch thick; it is flexible; it

won't melt; it won't dissolve; it won't perish; it is a nearly perfect insulator, and it holds electric power without leakage.

Mica is mined chiefly in India, Africa and Brazil. After it is taken from the mines it is roughly dressed, ready for shipping, but in the rough dressing four-fifths of the total mined has to be discarded because the pieces are too small or because it is not of sufficiently good quality.

* * *

Australia has a cave town in which a whole community dwells as well as works underground. The people of Coober Pedy, in the desolate hinterland of South Australia, have lived underground for 30 years or so and show no signs of coming to the surface.

Coober Pedy lies under a bare horse-shoe shaped depression. From the ruin of the ridge bounding it, the only sign of habitation is the smoke from iron flues sticking out of the ground. The houses are well down in the subsoil. You climb down to them. There is only one building and that is a mere addition to the village store, the main part of which is subterranean. The inhabitants of Coober Pedy work, sleep and eat underground.

Opal mining is the only reason for the strange settlement's existence. The miners follow the veins of opal down to 70 feet below the surface. The Post Office, the Savings Bank, the store which serves as the social centre, the offices of visiting opal buyers—are all underground. There is no telegraph or telephone. Apart from wireless, the only regular link with the outside world is the desert track to Kingoonya on the Trans-Continental Railway, along which the mail comes once a week.

Coober Pedy produces the best opals mined in Australia. Opals are Australia's chief jewel.

* * *

Jim Moran's strange ways of earning a livelihood are *not* recommended, though it is true that his adventures must have brought him plenty of excitement. Moran once spent 82 hours searching for a needle in a haystick. He makes a living by acting in films and on the radio, but he is better known for his hobby of trying any stunt suggested. He is the man who went to Alaska to prove that he could sell refrigerators to Eskimos. He once cut 200 lbs. of ice from the heart of a glacier and sold it in Washington for a good profit.

He got half of himself sunburned in Florida in 1940, and then journeyed to California and got the other half burned to compare the quality of Florida and California sun tan.

* * *

The fascinating story that lies behind the introduction of coffee into India dates back to 1600 when Bababudan Sahib rallied the faithful high up on the Chandragiri Hills in Mysore State to give battle to a murderous bandit chieftain, who was devastating the country. The bandit and his men perished. Bababudan Sahib who had fought in the spirit of a crusader thereafter went on a pilgrimage to the Holy City of Mecca. When he returned he told his followers that he had brought from the Holy Land as gift for them seven seeds of a wondrous plant which would serve as " food and drink " to them. These seeds were planted on the Chandragiri Hills. The foundation of the coffee industry in India was thus well and truly laid by Bababudan Sahib.

History records that tiny plants from the Bababudan stock were carried across the seas and started the big plantations in Dutch East Indies and Brazil. Dutch East Indies got its first coffee plants from Cannanore in Malabar in 1696. These having been destroyed by floods, a second consignment from India followed three years later and became the forerunner of the *arabica* coffee plantation of the Dutch East Indies. In 1760, coffee plants taken from Goa in Portugese India to Rio de Janeiro introduced coffee cultivation in Brazil.

But it was only in 1799 that the possibilities of coffee as a commercial crop attracted the attention of the East India Company. An experimental plantation was opened in Tellicherry and afterwards regular plantations sprang up all over the slopes of the Ghats in South India.

The perseverance of the pioneers of the coffee industry wrought a miracle. In less than a century thousands of acres of wild jungle on the mountain ranges were cleared and converted into

coffee gardens. By 1872. India was able to export as much as 25.000 tons of coffee.

* * *

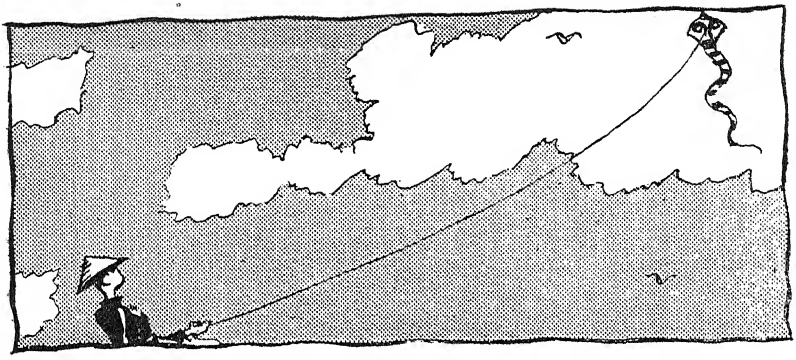
Kites, it is said, were invented four centuries before the Christian era, but they have been in use in Asia from time immemorial. Kite-flying has always been a national pastime of the Koreans, Chinese, Japanese, Tonkingese, Annamese, Malays and Indians. The origin of the sport, although obscure, is usually ascribed to religion. In Korea its origin is attributed to a general, who, hundreds of years ago, inspired his troops by sending up a kite with a lantern attached, which was mistaken by his army for a new star and a token of divine succour. Another Korean general put the kite to mechanical uses to span a stream with a cord, which was then fastened to a cable and formed the nucleus of a bridge. Chinese and Japanese kites are of many shapes, such as birds, dragons, beasts and fishes, some as much as 7 feet in height or breadth. In China the 9th day of the 9th month is " Kites' Day," when people of all classes go to the hills to fly their kites. The Malays possess a large variety of kites, mostly without tails. The Sultan of Johore sent to the Columbian Exposition at Chicago in 1893 a collection of 15 different kinds. Asiatic musical kites bear one or more perforated reeds or bamboos which make a plaintive sound that can be heard for great distances.

Kite-flying for scientific purposes began in the middle of the 18th century. In 1752 Benjamin Franklin made his memorable kite experiment, by which he attracted electricity from the air and demonstrated the electrical nature of lightning.

A kite is so simple a method of lifting anything that it has naturally been used for various military purposes, such as signalling to a long distance, carrying up flags, or lamps, or semaphores. For purposes of photography a small kite carrying a camera to a considerable height may float over a fort or other place of which a bird's eye-view is required, the shutter being operated by electric wire, or clockwork.

The problem of lifting a man by means of kites was an important one in earlier days.

Captain B. F. S. Baden-Powell, of the Scots Guards, in 1894, constructed a huge kite 36 feet high. He afterwards improved the contrivance, using five or six smaller kites attached together in perference to one large one. With this he frequently ascended



as high as 100 feet. The kites were hexagonal, being 12 feet high and 12 feet across. This kite was proved to be capable of raising a man even during a dead calm, the retaining line being fixed to a wagon and towed along. Lieut. H. D. Wise made some trials in America in 1897 with large kites and succeeded in lifting a man 40 feet above the ground.

* * *

Peter Thellusson, a London merchant, hoped to turn £600,000 into £20,000,000 by long-term investment, but litigation cost his heirs his fortune. In his will he directed that his £600,000 should accumulate during the lives of his three sons and those of their sons. The will was contested in the courts, and the case ultimately went to the House of Lords. He had calculated that one of his descendants would eventually receive £20,000,000. But it was held that this was against public policy. A special Act had to be passed to break this extraordinary will and the Thellusson Act became law in 1800. Over a century later, in 1925, it was re-enacted by the Law of Property Act which provides that money and property must not be allowed to accumulate for longer than the lives actually in being at the death of the testator. Future unborn generations cannot benefit. People of property have always been tempted to restrain their heirs from wasting fortunes, but here the law of perpetuity steps in. Peter Thellusson's last grandson died in 1856, and after other law suits the money went to the grandsons of Peter's third son.

By that time so much money had been spent in litigation that there was very little left.

* * *

The first World War had its pigeon heroes that share with human heroes in public plaudits. Cher Ami, most famous of all

pigeon heroes, carried the message that saved the " Lost Battalion " in the Argonne. With one leg shot away, Cher Ami fought her way through heavy artillery fire to bring word to the Americans of the battalion's plight. Cher Ami now stands in mounted glory in the National Museum at Washington.

This war is fast producing pigeon heroes worthy of the Cher Ami tradition. On Guadalcanal " Blackie Halligan " was launched into the air with an important message. Almost immediately the bird was brought to earth by the fire of enemy guns. But five hours later Blackie, maimed, arrived at his loft.

On August 19, 1942, the first news of the Allied landing at Dieppe was carried across the Channel by pigeons, travelling 27 miles in 32 minutes. It was the pigeon, " Yank," who brought word of the capture of Gafsa in the North African campaign. And on May 9, 1943, we read a report in a New York newspaper from Tunis, " *via* carrier pigeon to Allied Headquarters," of the triumphal entry of the United Nations into that city, " the greatest prize of the Tunisian campaign." The official title, however, of the messenger pigeon is homing pigeon, as carrier pigeon relates to another brood.

The pigeon hero may have only a number to distinguish it. But all Army pigeons are numbered and wear their number on a tiny leg band. It was U.S. Army pigeon 1169 that received an Army citation for " meritorious conduct," when the Coast Guard schooner with which it sailed developed trouble at sea, and No. 1169 flew ashore with a message giving the location of the ship and the reason for its plight.

Racing pigeons bear the number by which they are registered with the racing association that they represent. In the United States there are two of these organizations. When the Japanese attacked Pearl Harbour the U.S. War Department called upon the members of these associations and all civilian brooders of homing pigeons to surrender their birds to Government needs. Birds arrived by hundreds and thousands. There were 500 in one shipment alone. Many were champions. All had worthy records. And those were the birds that were to fly through shot and shell over the battlefields of Europe, Africa and the islands of the South Pacific and to make history.

Training begins for a pigeon at the age of 28 days. It consists chiefly of carefully timed flights, gradually extending over longer distances and varying conditions. The pigeon returning through the little trap door of its loft, which smartly permits ingress and prevents egress, is immediately fed. It is through food and its

family affections that the homing instincts are developed in the pigeon. The family life of the pigeon is exemplary. It is a loving parent and a devoted mate. The Portable Combat Loft is home to pigeons, whether it is on a rolling battleship or camouflaged in a South Pacific jungle. The Mobile Combat Loft is carried on a trailer behind the ever-useful jeep and keeps step with the infantry on the march.

* * *

Eighty years ago Sir Richard Temple said of the tribes of the Central Provinces of India that "they are honest and truth-telling; they are simple-minded; though superstitious, they are yet free from fanaticism; they have great physical endurance; their courage is remarkable." Mr. Verrier Elwin who has made a close study of these people says the true hillman is a pillar of honesty and truth. If he finds a store of honey in a tree, he will put certain signs at the bottom and no one else will touch it. The wild Baigas and Marias have no locks on their doors; they simply arrange pieces of wood across the threshold, and they know that no one will enter their house in their absence. It is well known that a true aboriginal accused of murder nearly always admits it, quite simply and says why he did it. I was once told by a lawyer that when he saw that the opposite party called a Baiga witness, he generally advised his client to throw up the case—for if there was a Baiga it would be impossible to tamper with his evidence.

Now the very fact that the more 'primitive' the person the more honest and truthful he is, Mr. Elwin adds, should make us think very seriously about the value of our own culture. In relation to aboriginal life, truth is the first casualty in the civilising process.

Dylsford has become one of England's best-known villages. a very attractive modern village, which thousands of people want to visit. Yet it exists only in the imagination.

The village of Dylsford was created by an official of the B.B.C. Schools Department impressed by the interesting experiments in local study carried out in some village schools. It seemed to him that other schools might benefit by knowing of such activities. Starting from the village school, with the boys and girls, and their schoolmaster as the characters, the story of Dylsford develops through the Explorers' Club which they form.

It was expected that schools of the same pattern as Dylsford would follow the broadcasts and form their own Explorers' Clubs, but town schools also showed considerable interest in the series because it brought the countryside into the classroom.

When the producer visited Edinburgh the commissionaire at Broadcasting House said to him, " Excuse me, but can you tell me where this village of Dylsford is ? I had a gentleman in here the other day who said he'd searched every map of England he could lay hands on but still couldn't find it." The fact that a townsman in Scotland listened to a programme about an English village devised for rural schools showed how real the imaginary village has become.

* * *

From about 10,500,000 acres in 1878-79, the area annually irrigated by Indian State works alone has risen to about 31,000,000—nearly one-eighth of the total cultivated area in British India.

The total capital outlay on irrigation and navigation works amounts to over Rs. 153 crores, the gross revenue for the year to about Rs. 14 crores and the working expenses to about Rs. 5 crores, thus yielding a net return on capital of about 5.7 per cent. —quite a satisfactory figure !

By far the largest of India's more recent undertakings is the Lloyd (Sukkur) Barrage and Canals Construction Scheme. With its 6,600 miles of channels and 48,000 miles of water-courses capable of drawing 46,000 cubic feet of water a second from the river, it is the largest canal system in India—possibly in the world. Its largest canal is the broadest ever excavated and exceeds the Panama Canal in width at bed level.

Another great engineering work is the Cauvery Mettur Project. Framed with two objects, first, to improve the existing water supplies for the Cauvery delta area of over a million acres, and, secondly, to extend irrigation to a new area of over 300,000 acres,

the project involved the construction of a large dam on the Cauvery at Mettur and of an irrigation canal (the Grand Anicut canal) and the improvement and extension of the existing Vadavar canal.

Easily first in the British Empire, the dam at Mettur is over a mile long and impounds a 60 square-mile lake with a shoreline of 180 miles and a maximum effective capacity of about 94,000 million cubic feet of water.

* * *

It's all right to take your time, but not your employer's.
—FORBES.

* * *

The Lord prefers common-looking people. That is the reason. He makes so many of them.—LINCOLN.

* * *

History is a little more than the register of the crimes, follies and misfortunes of mankind.—GIBBON.

* * *

All the old know what it is to be young and foolish ; but none of the young know what it is to be old and wise.
—NEVILLE CHAMBERLAIN.

* * *

There are but two powers in the world—the sword and the mind. In the long run the sword is always beaten by the mind.—NAPOLEON.

* * *

Never attempt to bear more than one kind of trouble at once. Some people bear three kinds—all they had—all they have now, and all they ever expect to have.—EDWARD EVERETT HALE.

* * *

An evil-speaker differs from an evil-doer in lack of courage.
—QUINTILLIAN.

* * *

FOR YOUR VOCABULARY

1. If you had a Jolly Roger, you would
   dance at a country fair ?
   hoist it to a ship's mast ?
   drink it ?
   or be a noisy reveller ?

2. If, in discussing you, your friends pronounced you to be pursey, you would
   see a doctor in great alarm ?
   know yourself to be wealthy ?
   realise you were a miser ?
   consult your mirror to see if you were foppish ?
   or go on a diet ?

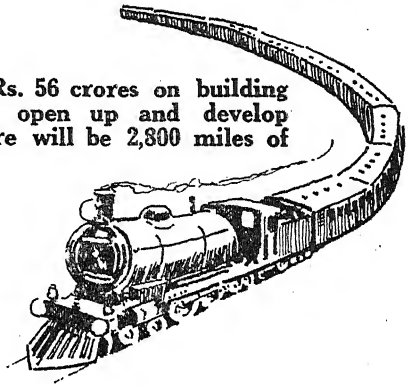
3. If you were given a farthingale, you would
   wear it ?
   present it to a museum ?
   try to get another to make a pair ?
   or keep it with your loose change ?

4. If you were invited to a gobang party, you would
   change into a football jersey and running shorts ?
   wear evening dress ?
   go as you were ?
   or take a hockey stick ?

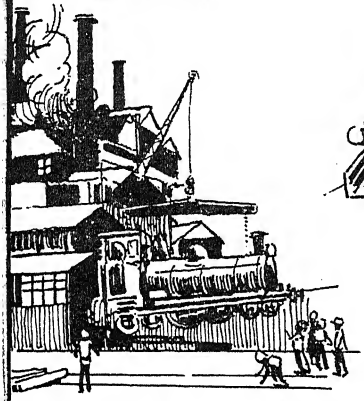
5. If you went to buy a Jacynth, you would go to
   the botanical gardens ?
   to a jeweller ?
   to a bird hawker ?
   or to a book shop ?

(*Answers on pages 121-122.*)

INDIAN TRANSPORT TO-DAY—



INDIA plans to spend Rs. 56 crores on building new railway lines to open up and develop backward areas. There will be 2,800 miles of new construction.

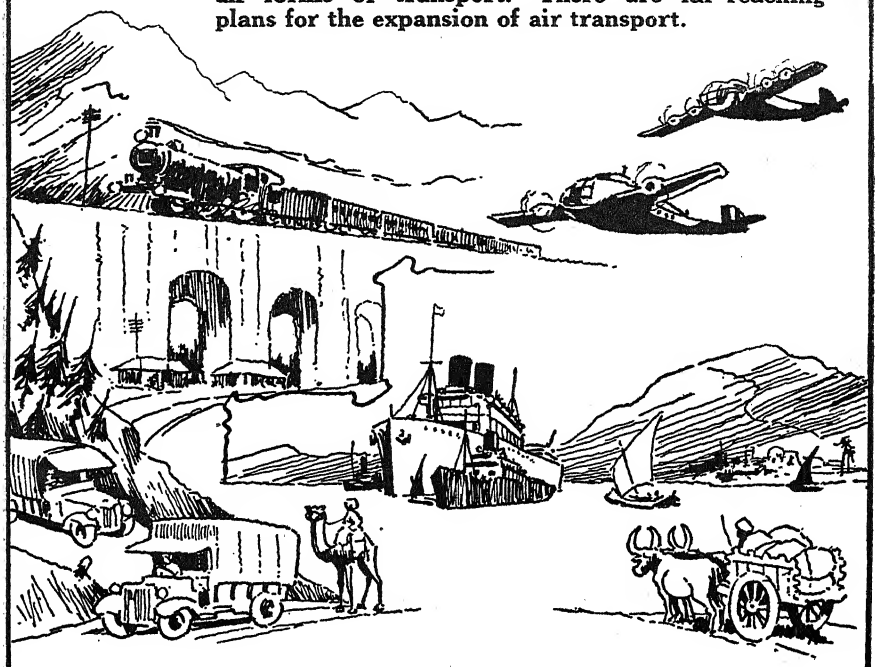


Manufacture of railway engines in India has long been under examination. Private firms have been invited to make boilers now and engines as soon as possible in the post-war period.

People who cannot afford the luxury of 1st class travel have received sympathetic consideration in the post-war plans. There are going to be great improvements for them. What the Railway Administrators want to do is to "increase the dignity and comfort of third-class travel." Revenue from India's millions of third-class passengers represents a considerable portion of the railways' annual revenue.

—AND TO-MORROW

RAILWAYS, aircraft, road transport, ships, countrycraft,—even camels and bullock carts—will all have a part to play in the India of tomorrow. If the country is to be developed on scientific lines there must be co-ordination between all forms of transport. There are far-reaching plans for the expansion of air transport.



When Sir Lakshmipati Misra spoke on the future of transportation in India he said the co-ordination of transport was a most pressing need and emphasised that if the country develops according to plan there should be ample business and profits for all.

India's Largest Employer

Chances for all Communities on India's State Railways.

THE Railways are, in normal times, India's largest employers. Workers in all grades number close on 9,00,000. The annual pay bill is well over Rs. 50 crores. Indianisation has made remarkable progress in the past ten years. If you take the grade of Gazetted Officers you will find some very encouraging indications of the scope for Indians of all communities, and of the opportunities to rise to the highest positions in India's great railway system. On the State managed railways ten years ago, there were approximately 780 Europeans, 301 Hindus, 74 Muslims. 85 Anglo-Indians and Domiciled Europeans, 17 Sikhs, 21 Indian Christians—a total of 1,295—in the Gazetted Services. Note how the position has changed in the last ten years. There is now a total of 1,278 Gazetted Officers. The difference in the total is immaterial, but the representation of the various communities shows remarkable changes. There are now 454 Europeans, 455 Hindus, 133 Muslims, 140 Anglo-Indians and Domiciled Europeans, 32 Sikhs, 30 Indian Christians, 31 Parsis, and 3 Officers of other communities.

If you are interested in percentages you will get a much clearer picture of the changes that have come about from the following facts. Indian personnel in the supervisor services has increased in ten years from 39.77 per cent. to 64.48 per cent. on State-managed railways and from 36.23 per cent. to 64.08 per cent. on Company-managed railways.

What, then, of the future of India's railways as an organisation to which increasing numbers of young men may turn for employment with attractive possibilities? Are railways a thing of the past? Will they be replaced by great road transport organisations and passenger and freight carrying aircraft? There is admittedly tremendous scope for road and air transport in the vastness and great potential wealth of India, but there will always be a demand for the fast and inexpensive transport

that railways provide. Men who ought to know are convinced that there is a very bright future for our railways. Here is one of the clearest statements of expert opinion yet given on the railways' post-war future. It was given by Sir Lakshmipati Misra, Member of the Railway Board, answering questions over All-India Radio. Here are the questions and the answers.

Question.—Expert post-war plans have been prepared for agricultural, education, medical relief, industrial development, civil aviation, etc. The Bombay Plan has been before the public for more than six months. Have railways prepared any plan to meet post-war developments in the country ?

Answer.—Yes. The railways have also prepared a fairly comprehensive programme. If the ideal aimed at in the Bombay Plan is realised, the cost of the Railway Plan would come up to about Rs. 1,200,00,00,000 in the first 17 years of the post-war period—Rs. 320,00,00,000 in the first seven years, Rs. 400,00,00,000 between the seventh and twelfth year and Rs. 500,00,00,000 in the last five years ; but planning for railways is quite different to that for medical relief, education, agriculture. In the case of the last three, the needs are fairly well known, while in the case of railways, the needs will develop with the materialisation of the post-war reconstruction plan of the country and it would be difficult for railways to gauge its effect on their carrying capacity or to estimate even approximately the full extent of the improvements needed in any particular year.

The Railway Plan has to be so prepared for post-war reconstruction as to enable railways to provide equipment and services a little in advance of what they may be required to carry from year to year. The railway reconstruction programme represents at this stage only the first phase of the basic plan but is capable of considerable expansion without any serious difficulties if other general developments materialise earlier than expected. It provides for rehabilitation, improvements in operation, efficiency and welfare of staff, amenities for third class passengers and new construction. Under rehabilitation, work-shop machinery, locomotives, coaching and goods stock, track ballast, rails, sleepers, bridges, signalling and other equipment are to be brought up to a proper standard of efficiency. The operative improvements provide doubling of track in station yards, signalling and interlocking of control weirs, road over-bridges, water softening plants, strengthening of weak bridges and additions to engine sheds and " sick " sidings. Plans have been made to house about three-fourths of the railway staff, supply

good drinking water, provide new railway hospitals dispensaries, training schools for staff, institutes, Rs. 56,00,00,000 are to be spent on new lines to open u develop backward areas in India.

Q.—Yes. You are quite right. Railways have to anti their requirements and must, therefore, find more difficul planning. But I notice that the Railway Plan provides o 2,800 miles of new constructions while the Bombay recommended 21,000 miles of new railways. Is there any reason for planning such a small mileage in the first seven

A.—Yes, for over 80 years, railways provided a fo transport quicker, more comfortable and cheaper in cost pe They were considered indispensable for opening up new terri naturally the progress in a country used to be judged and some extent dependent upon the mileage of the railways bu

With the development of aeroplanes and road moto position has completely changed, as these two forms of tra provide for certain requirements better facilities than rai and it would no longer be prudent to judge the utility of a r plan or its contribution to the economic development country merely by the mileage of new railways programm construction. Statistics in respect of the number of square of territory or population per mile of railway will not be a guide in considering this question, for when railways were in Europe or America, aeroplanes and road motors had no developed. If countries in Europe or America were to plan railways and roads now, they would provide much less mile railways than what they built in the past.

It is not generally known that Russia with a much large than India had in 1918 almost the same railway mileage a of India, but in spite of the serious deficit, Soviet Russia between 1918-36 only 9,000 miles of new lines or an aver 500 miles per year over its huge continent. In view of Russians have achieved in this war, no one can accuse th having failed to meet the economic requirements of their co If an average of 500 miles a year was found by Russia to b cient to develop its backward areas, India cannot be said t been starved for rail communications if an equal mile planned for the first part of post-war reconstruction.

It is expected that with 5,000 miles of new railways, no of any importance will be more than 25 miles from a r except in the deserts or hills. It is sincerely to be hope the lessons of this war in regard to transport deficiency in

will not be forgotten and that the transport in India will be regarded as a whole. Roads, railways, waterways and air services will play their full part in the development of the country by no means rich enough to afford the luxury of duplication of effort and consequent waste of its limited resources.

If it is essential that every rupee spent on national development must be used to the best advantage, expenditure on each form of transport will have to be restricted only to what is required for the development of the country. New railways should be built in such areas as cannot be developed through roads. In any case, about 15,000 miles of railways have already been surveyed, and it will be quite easy to increase the programme of new constructions, if necessary.

Q.—Thank you for this information. It clears the ground but could you give me a general idea of the basis on which the Railway Department is planning its reconstruction ?

A.—Yes, the post-war reconstruction of railways is being planned solely with a view to rendering genuine service to the country, to railway employees and to earning small profits for the railways. The plan is intended :—

(*a*) to increase the dignity and comforts of third class travel ;

(*b*) to give quicker and more efficient service to railway clients ; and

(*c*) to improve the health and efficiency of its employees and thus increase their usefulness both to the public and to their employers.

Q.—I agree that these are good ideals in post-war reconstruction, but do you think that you would be able to achieve them with a comparatively small expenditure of Rs. 320,00,00,000.

A.—I mentioned earlier that Rs. 320,00,00,000 represented expenditure for only the first quinquennium and that if the general developments now being planned materialise in the country and its wealth increases, the expenditure planned in the next two quinquennia would be considerably more.

The difficulty as far as can be seen at present may not be so much of finance as of lack of experience in the technical personnel. Till the staff in charge have acquired sufficient technical experience to get the best out of the expenditure incurred, it may not be wise to throw on them a greater burden than what they can bear. Apart from this consideration, the expenditure proposed for the first seven years may appear small compared with what is required for other post-war plans in the country, but it is colossal compared

with the amounts spent on rehabilitation, improvements and development in any period of railway history in India. If properly utilised the expenditure will certainly bring railway equipment and service to a standard of efficiency of which any Indian may justly be proud.

Q.—How will the Railway Plan assist basic industries like locomotives and boilers manufacture and wagon construction ?

A.—Plans for the manufacture of locomotive boilers at Kanchrapara are nearly complete. The Government of India are already in negotiation with a private firm for the manufacture of locomotive boilers immediately as a war measure and of engines as soon as possible in the post-war period. Machinery required for the boilers has already been ordered and is expected in the near future. It is hoped that by the end of the third year of the post-war period one or possibly two shops may have commenced the manufacture of locomotives in the country.

In regard to wagons, the building capacity in India is being developed for about 800 wagons per month and will be sufficient to cover all the requirements in the earlier stages of the post-war period. The manufacture of passenger coaches has already become an indigenous industry. With the developments now taking place, India should become self-supporting in the near future in respect of her requirements of standard types of post-war engines, boilers, wagons and coaches.

Q.—This is quite satisfactory, but what about other industries ? How will your plan react on and foster general industrial development of the country ?

A.—I have already given the details in regard to the manufacture of engines, boilers, wagons and passenger coaches. The next important item is workshop machinery. Its replacement requirements have been worked out for the first 20 years of the post-war period and the machine tool manufacturers in the country are being advised of the business available for them in the post-war period. It is up to them to take full advantage of the encouragement now being assured to them and manufacture all that Indian railways need.

Q.—What will be the future relationship between railways and other forms of transport—road, river and air ?

A.—If India is to be developed on scientific lines, there must be co-ordination of effort between all forms of transport. Railways are out to serve the community to the best of their resources and equipment. They feel that their salvation and that of other forms of transport lies in a properly controlled and co-ordinated

system and that it would offer ample scope for the utilisation to the fullest extent of railways, aeroplanes, steamers, country boats, road vehicles, lorries, bullock carts, etc.

If the country develops according to plan, there should be ample business and profits for all. If it does not, no form of transport will make any special headway. Co-ordination between transport agencies will be the most pressing need in the post-war period. It is obvious that the lion's share of profits for any particular form of transport in an undeveloped India will be much less than regulated profits for all in a well developed India. Let transport organisations, therefore, assist this development and improve their services to the community. Adequate business and profits will follow automatically.

Careers in Art

A Promising and Wide Vocational Field for Exploration.

"WE have heard much about post-war reconstruction. We have heard much about the proposed development of large and small industries, but seldom do we hear the voice of the artist telling us to what extent he can make his contribution to this end. To-day the trained artist, or, to be more precise, the artist trained to acknowledge and adapt himself to the restrictions imposed by reproductive methods, is offered a promising and wide vocational field for exploration. His importance as an essential factor in commerce and industry is already established, and it now remains for the industrialist more fully to realise the indispensability of the artist in the production of his goods. While there will be for the artist a number of safe jobs, it is the function of the artist not only to create things of beauty but, further, to foster throughout the community an interest and desire for things of beauty. It is the job of an adventurous pioneer and more and more avenues will open to him."

This introductory note comes from an address to the study circle of an Indian commercial section and it is offered as another encouraging indication of the increasing thought and attention India is now giving to the uses of art in industry.

The ambitious youngster seeking a career in one of the many branches of art—in drawing and painting, in architecture or sculpture, or in commercial art—is provided in India's schools of arts with well-planned courses of study, under experienced staffs. Take the famous J. J. School of Arts in Bombay as a good example of this hitherto largely neglected gateway to interesting careers. The present Director, Mr. Charles Gerrard, who succeeded the well-known painter, Mr. G. E. Solomon, in 1937, was brought out shortly before that with a two-fold object, firstly to introduce and establish in the School a separate department of commercial art, and secondly to foster in all departments of the school the strictly practical side.

A brief notice of the history of the School will be of interest. Established in 1853 by means of a generous donation by Sir

Jamsetjee Jeejeebhoy of one lakh of rupees, the first classes in drawing were opened in 1857 and classes for design and engraving added later. Increasing interest from the public and the growing prosperity of Bombay inspired the creation of classes in decorative painting, modelling and ornamental wrought-iron work. The School is now divided into six departments—Drawing and Painting, Architecture, Sculpture, Commercial Art, Crafts, and the Training Class for drawing teachers. The first four are diploma courses and the period of study for each is five years, except in the case of commercial art, which lasts four years.

An analysis of the numbers and classes of the students during recent years is illuminating. There were over 700 pupils, of whom about fifteen per cent. were women, showing a general increase in each department. All communities one would normally expect are represented—Hindus, Muslims, Parsis, Indian Christians, Europeans, Anglo-Indians, Sikhs, Jains, Jews, and even a few Buddhists. The Hindus number well over half the total and the Parsis, while more numerous than the Muslims, are not out of proportion to their numbers in the city of Bombay. Considering the artistic aptitude of this community, and also their high standard of education and the wealth which enables them to profit by advanced courses, it is rather surprising that they are not more numerous. A gratifying feature is that there are some members of the Scheduled Castes and other backward classes. But their number is very small and is indicative of a need for increased assistance in scholarships and in patronage after their studies.

The casual visitor will be struck with the earnestness with which classes, men and women together, are studying and placing on canvas, the features of a living model. In one room the centre of the stage is a typical saddhu, serenely fingering his beads, in another room is a strapping Pathan. What chances will there be for all these students, once their studies are ended? In any country there are very few painters who make a profitable living and it is no doubt for this reason that such a high proportion take up commercial art. One sees in India a very small number of original paintings in private houses, despite the pride of the average cultured Indian in the Ajanta frescoes and in the Mughal paintings. But there are other possibilities beyond the painting of ordinary pictures. The murals in the Secretariat buildings at New Delhi were executed by students from the Lahore and Bombay Schools of Art. A notable and successful work of the

Bombay students, familiar to many Bombay residents, is the set of murals in the Metro Cinema, carried out by them to the designs of Mr. Gerrard and under his direction. No doubt, with the prosperity that India has gained during the war, there will be an increasing demand in cinemas, in public halls and in other places for these murals. Art in public places has been sadly neglected and, to take only one example, the halls of our large stations could to advantage be embellished with them.

The film industry offers a very wide field to the painter. It is now a very well established industry and will most certainly expand after the war. The designing of dresses and of stage sets should provide employment for hundreds of capable artists. The film-going public of India are particularly keen on films of a historical nature and films such as 'Pukar' and 'The Court Dancer' need intelligent and well-trained artists, imbued with a knowledge of the past. It is well-known that the Bombay School, while taking the Ajanta frescoes as their model and inspiration, have infused a new outlook into the teaching of Art, ever seeking to bring the teaching into line with modern conditions.

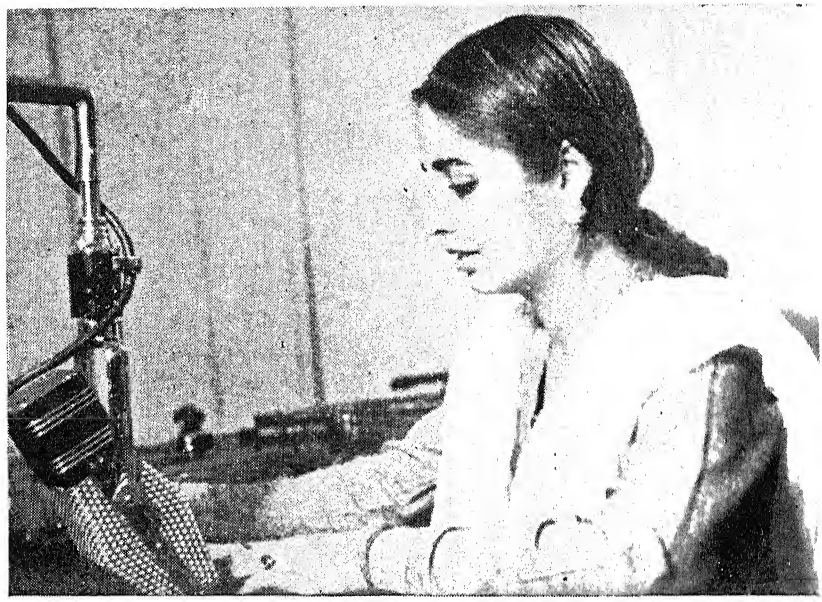
The institution of the commercial art department emphasises the practical view-point of the School of Arts. It is not enough, with the keen competition in all branches of commerce, that an article be designed well and truly for its special purpose but there is a need also 'for the artistic presentation of such products to a more discerning and critical public taste.' Industrialists throughout India have realised the need for artistic advertising and in the city of Bombay alone there is a vast field for clever and industrious artists. A Parsi is running very successfully a studio of commercial advertising and finds more employment that he is able to carry out. Once the war is over, and more materials are available for a further expansion in advertising, and the need for advertising in face of competition from overseas is realised—every competent and conscientious artist will find work ready for him. In the Bombay School artists, after a sound academic grounding, are in their third and fourth years introduced to the practical studies of photography, lithography, block-making, printing, modern packaging and interior decoration. It is noteworthy that there is an increasing demand for students of this department from commercial studios and that many are now carrying out important tasks in Government service and with industrial firms.

The 'Art in Industry' exhibitions which are held in Bombay and Calcutta, have done much to stimulate the interest of the

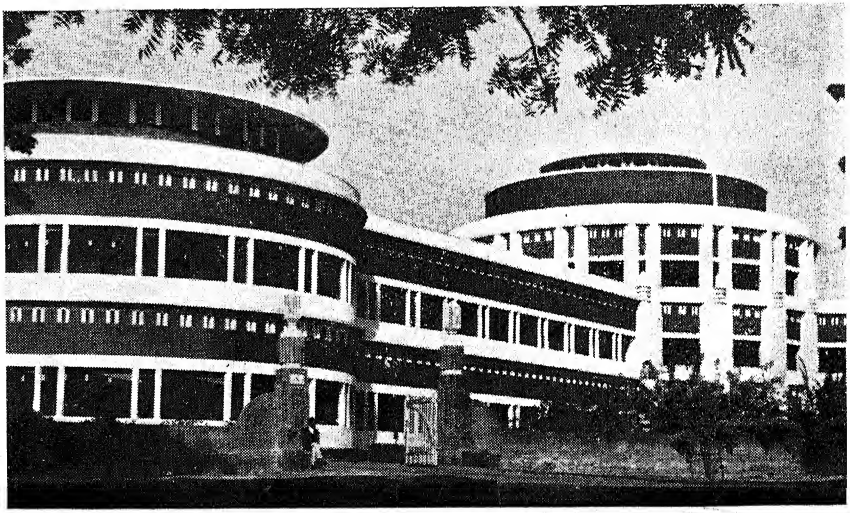
Careers In Art

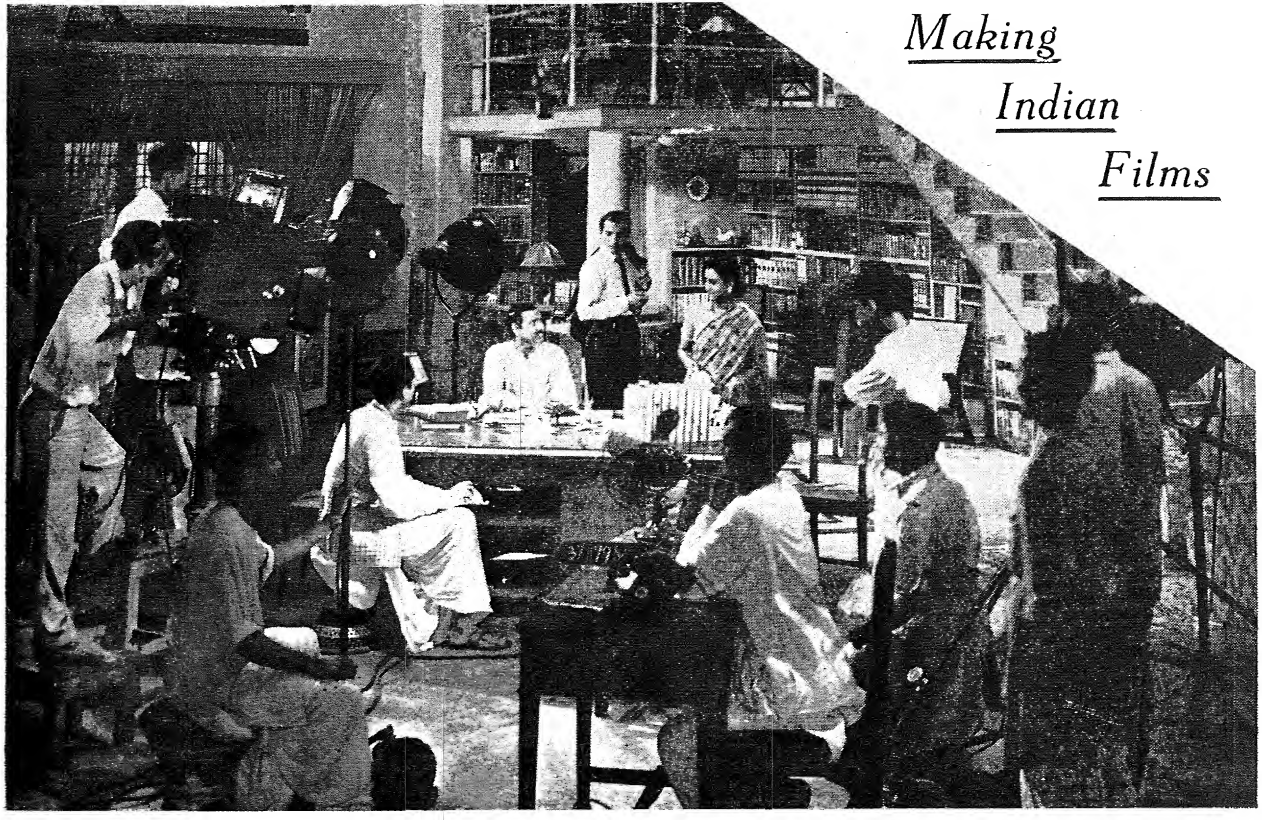
Young men and women of all communities attend classes in Indian art colleges through which they may enter a promising and wide vocational field.

Broadcasting

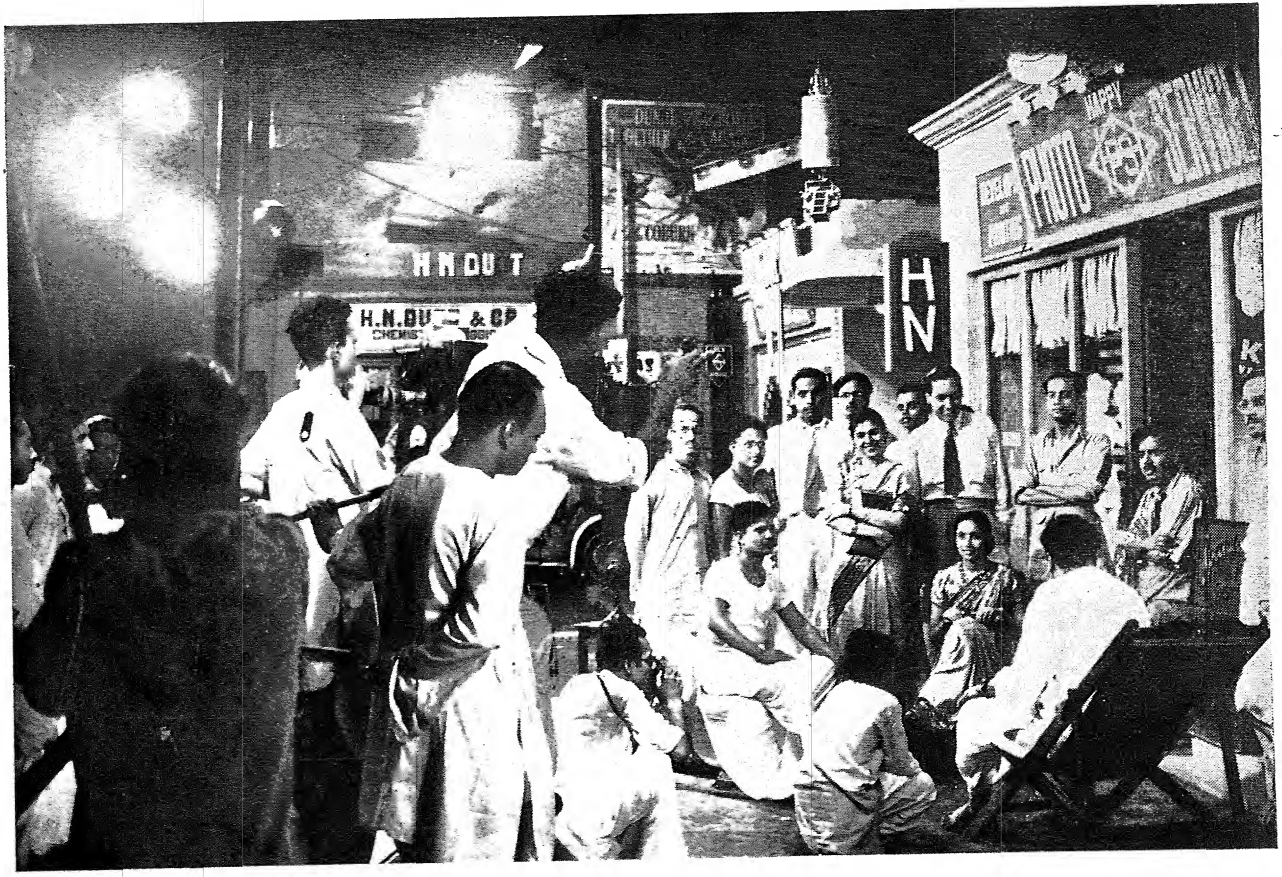


Artistes, technicians and buildings of Broadcasting House, New Delhi, Headquarters of All-India Radio.





Making Indian Films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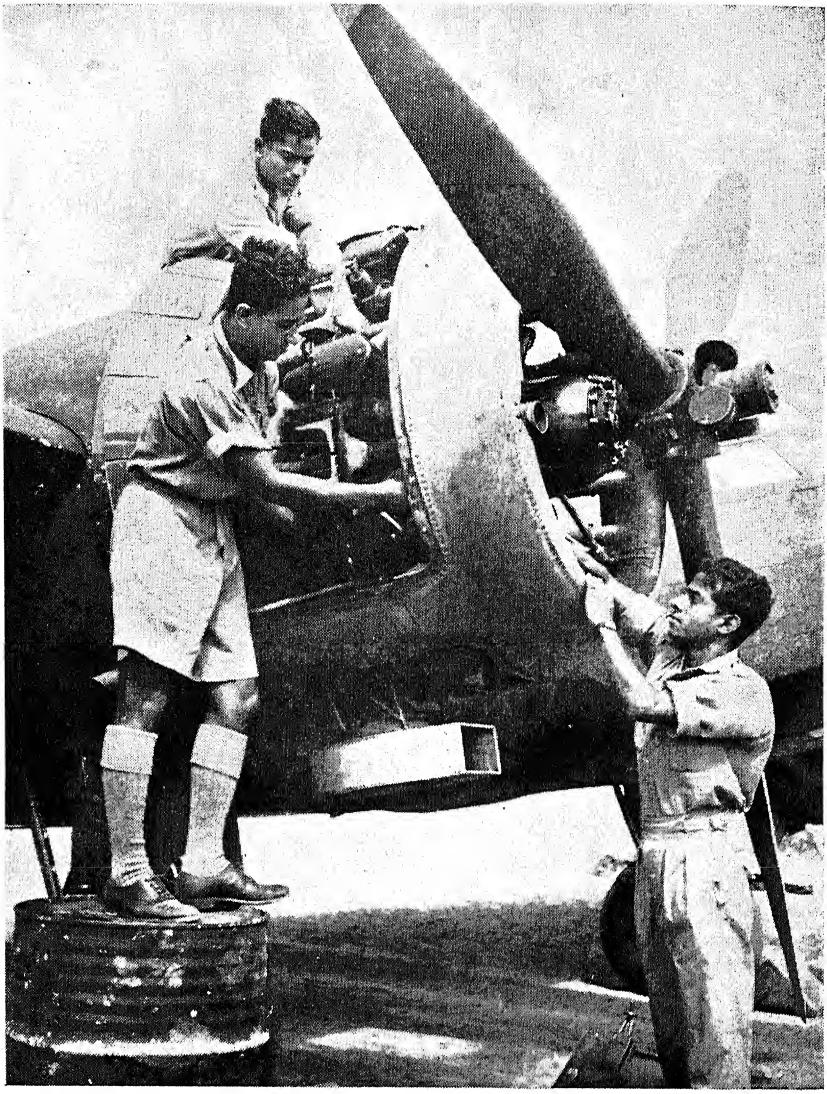
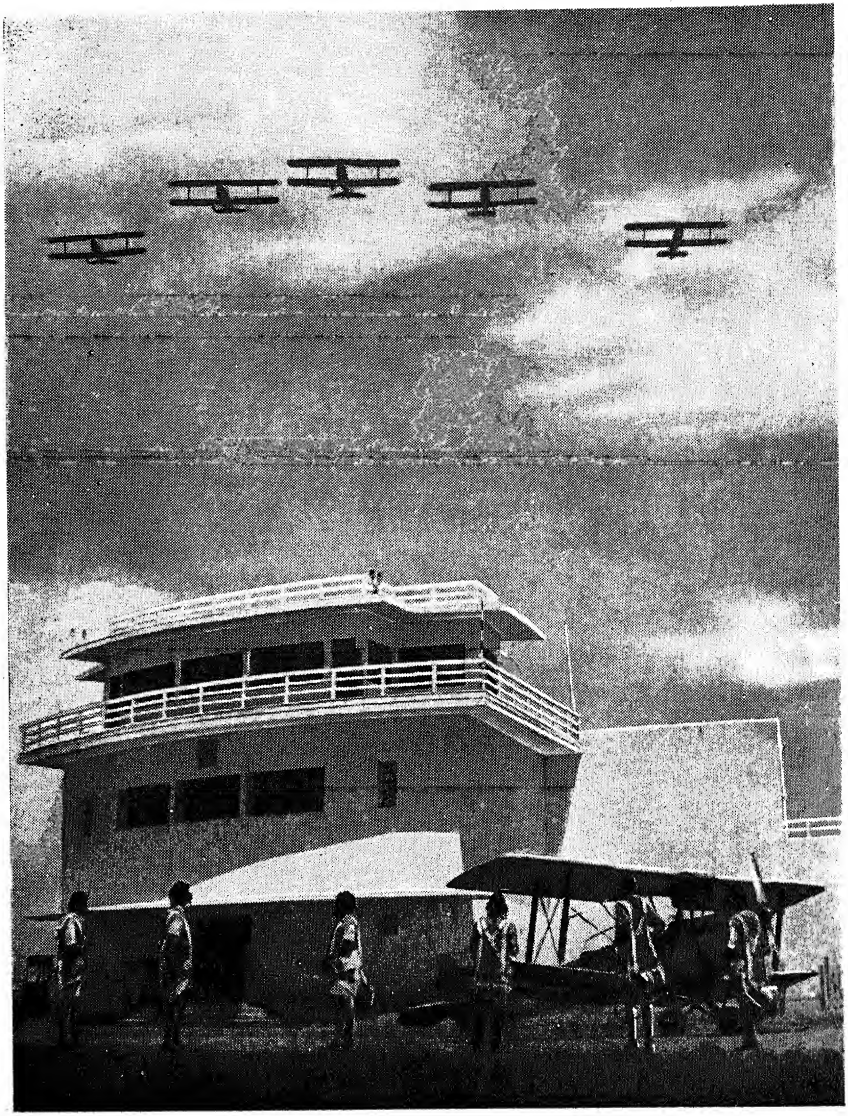
Careers in Aviation

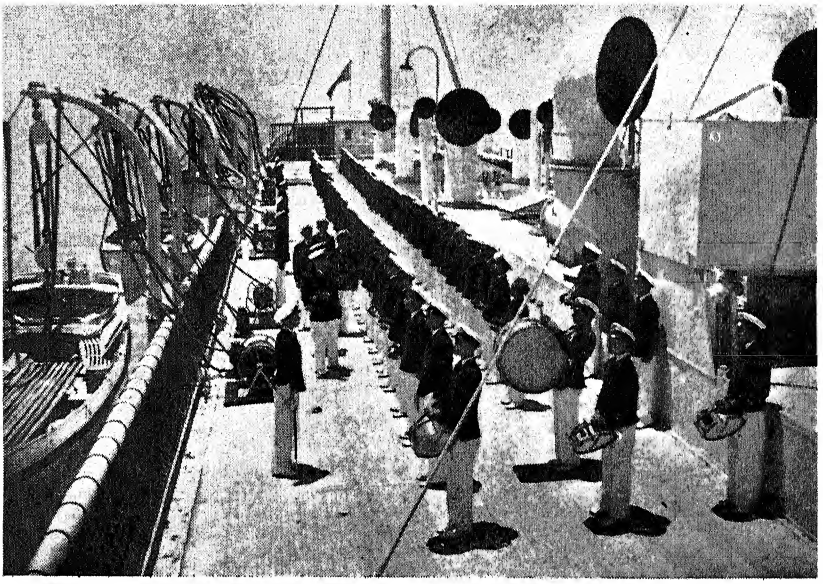


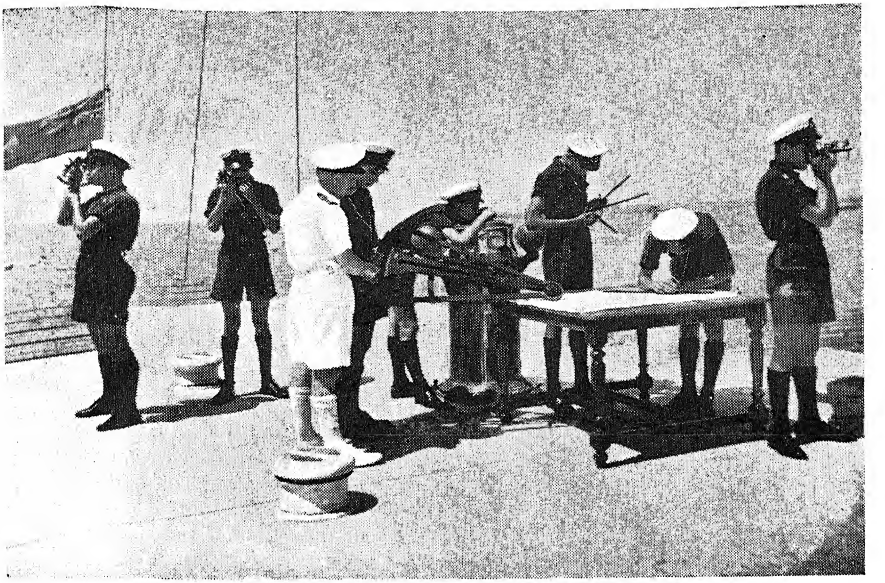


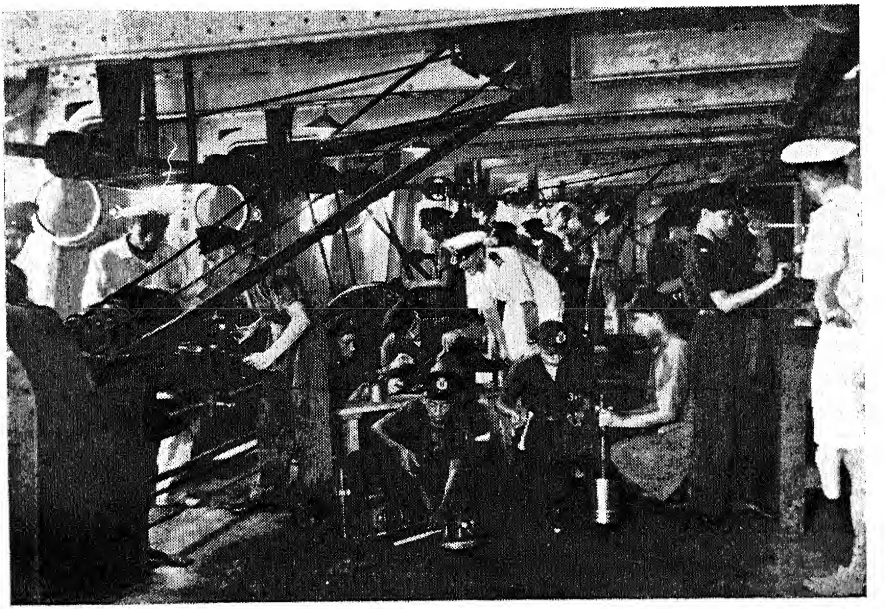
Teachers of the Future

India's Merchant Navy

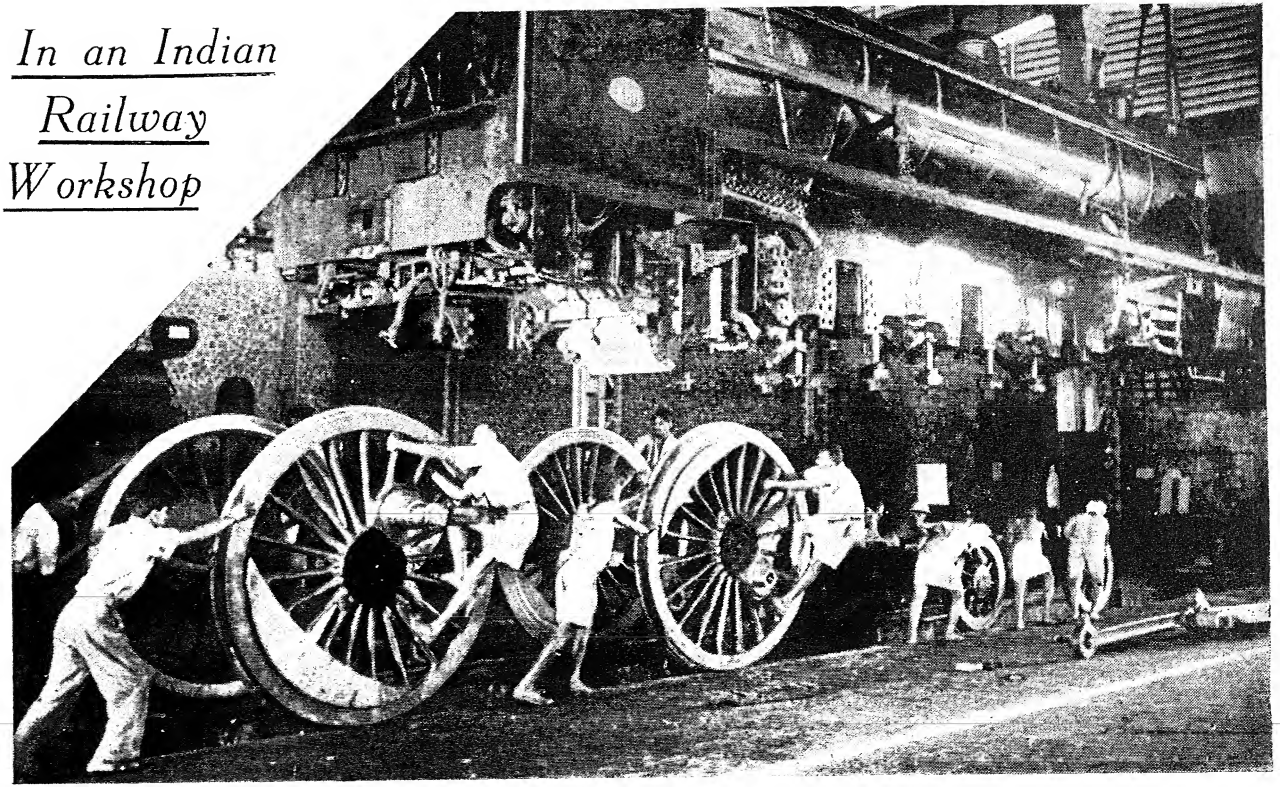
These photographs were taken on board the mercantile marine training ship "Dufferin," first training ship of its kind in Indian waters. Indian youths, anxious for careers at sea, are trained to hold their own as good and efficient officers.







In an Indian Railway Workshop



public and of industrial firms in the possibilities of commercial advertising and, not less important, in the application of art to industry in designing. These exhibitions offer substantial prizes and attract exhibits from many Indian centres. Another feature is the impressive list of lectures and demonstrations which are conducted in the main part by men with practical experience and with an assured position in the commercial life of the city. During the last season one of the most highly trained and successful artists in India gave a lecture on 'the development of a commercial design from idea to finish' and the Editor of the *Illustrated Weekly* showed by means of lantern slides the stages of production of an illustrated magazine, while a joint display was given of the works of the four leading commercial studios in the city.

Architecture is attracting many Indian students, and there are bound to be wide opportunities in this field. During the war years building for civilian purposes has been practically suspended and military buildings do not give many opportunities for architects. It has been the fashion for visiting writers to decry the public buildings of Bombay and, rather surprisingly, the only building that Aldous Huxley could at all commend was the Town Hall. But since his day new structures like the Reserve Bank, a building that has been widely praised, have arisen : a building, less known to the public but equally pleasing in its design, is the Club House at the Chembur Golf Course. It may be that in years to come, many of the unsightly houses still to be seen in all parts of India, will be demolished to make way for more artistic and comfortable quarters. Here will be an opportunity for gifted architects to combine the traditions of the past with modern amenities.

There has been little idea of Town Planning in India, and indeed not a great deal outside it. Industrial towns have sprung up, a conspicuous example being Cawnpore, with no thought but for the present and the result is appalling. In almost all towns we have sprawling, hideous bazaars, stretched as at Agra and Patna for miles. At the other end of the scale we have in New Delhi a gandiose example of Town Planning. There, of course, money was poured out without stint but it is possible that in the years to come architects will be called upon to devise schemes for the improvement of existing towns and for the creation of new ones. In Bombay there are some examples of intelligent and attractive planning. Khar is a not unsuccessful attempt at planning and the Cusrow Baug for Parsis in Colaba is an inspiring example of philanthropic work.

A more humble section of the school, but not without great possibilities, is the crafts section. The members of this are for the greater part very young and members of the backward classes, sons of hereditary craftsmen. They are given a three-year training and many of them are absorbed in craft-workshops in bazaars. Others return to their native villages and practise their crafts there. It is imperative that these craftsmen be given the widest opportunity to produce, whether in craft workshops or in their villages, work that will help to counteract the effects of the many mass-produced articles which will find their way into the country. In the past cheap Japanese articles have been notorious for their shoddiness and it is to these workers, trained in the principles of art and imbued with an honest pride in good workmanship, that we must depend, if India's name in industry is to be worthily upheld.

A good deal of stress has been laid on the possibilities of commercial advertising, but really far more important both for the community and for the student are the possibilities of Commercial designing. No doubt, as years go on, the factory system will extend and more and more articles will be produced by machines. But no article can be produced by a machine before a design is made and it is here that the artist is so important. We have heard during the war of the vital importance of the machine tool. The production of these machine tools is the very core of the industrial system in the mechanical sense and the artist is of equal importance in the designing of each particular article. If an article is to be produced in thousands or in hundreds of thousands, it does not mean that it can be produced in a haphazard fashion, rather is there the greater need for very careful designing by an artist, one who can combine practical ends with a pleasing effect.

When we buy a cup and saucer, we like pottery that will not only answer adequately the purpose for which it is intended but also something that will please the eye. A famous Indian firm of bootmakers have in their employment a well-trained artist, not only for their advertising business but also for the designing of boots and shoes that will attract the customer. It is the same with countless articles—the artistic designer is of the greatest importance. To take only a few articles—sarees, printed cotton, stationery, furniture, carpets—all derive their inspiration from the artist. There has been a belief in the past that an art training could produce only articles of luxury but that is a fallacy which fortunately is gradually disappearing.

Opportunities Abroad

Indians who have made good in their professions in other countries

YOUNG Indians are going in large numbers to complete their studies in the universities of Britain and America. In past years hundreds of Indian students settled in the countries to which they had gone to widen their knowledge and many of them have won distinction in their chosen professions. Edinburgh University has long been recognised as one of the world's finest training centres for medical men. Large numbers of Indians graduated there and to-day many of them are to be found in busy practices in the towns and cities of Great Britain and in the colonies which have large bodies of Indian settlers. Cosmopolitan America offers several fascinating stories of young Indians who went to learn, stayed on, found jobs and made good. Here are some word pictures of young Indians who have made names for themselves in the United States.

In peacetime, Sharat Kumar Roy who was born in India is Curator of Geology at the Chicago Natural History Museum, one of the leading natural history museums in America. Now, he is on duty as a captain in the U. S. Army Air Forces.

His present war work has been carried on chiefly in the far northern regions of the North American continent. He is an authority on certain regions of the Far North, having been a member of several scientific expeditions, including one to the Arctic.

Dr. Roy has been with the Chicago Museum of Natural History since 1925 and has played a leading role in the development of both its research and exhibition programmes.

He has made many expeditions in the past 19 years to do advanced research in geology and also to bring back specimens for the museum's collections.

His story of the Rawson-MacMillan Expedition to Labrador and Baffin Land has been published by the Chicago Museum. This expedition spent two summers and a winter, from June 1927

to September 1928, cruising the coastal waters of Labrador and Frobisher Bay, Baffin Land. Headquarters were established at Anatalak Bay about 20 miles north-west of Nain, Labrador. Members of the expedition made extended observations and collections relating to anthropology, botany, geology and zoology for the Chicago Museum, bringing back many new species of fossils, which Dr. Roy describes in his book. The means of transportation consisted of three boats—two schooners and a 35-foot cabin cruiser—and a snowmobile, the latter used for travel over frozen waterways.

Members of the expedition experienced all the hardships of Arctic exploration. The bitter cold in winter proved more bearable than the mosquitoes and black flies of the summer.

In the latter part of 1928, he returned to the Far North as leader of the Captain Marshall Field Geologic and Paleontologic Expedition to Newfoundland. On this occasion he completed some work begun on the first expedition, studied the geologic phenomena of the region and participated in a seal hunt.

Besides participating in the research programme of the Chicago Museum, Dr. Roy has helped carry out the museum's programme of constantly improving its exhibits. He prepared a new industrial mineral exhibit in which each subject is illustrated by a few specimens which demonstrate simply and plainly its essential features, thus giving the thousands of children and adults who visit the museum yearly an understanding of subjects generally incomprehensible to the layman.

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To help Indian industry by learning American commercial art techniques and to show Americans the beauty of Indian folk life through his paintings is the dual purpose of Amar Ghose, 36-year-old Indian artist who has been studying and working in the United States for the past 20 years.

Prominent in America as a commercial artist, Ghose is best known for his textile and rug design and his skill in retouching negatives for fashion photographs that appear in catalogues and pamphlets distributed by large mail-order firms throughout that country. He has also worked on animated cartoons, restored old masterpieces and studied photography, colour photography, air brushing and motion-picture lighting.

" Since I've been in America I have learned many things about art that could be valuable to Indian industry," he said during an interview in his New York studio. " Indian fine arts and crafts are beautiful and highly developed but it is the art

techniques used in American advertising, motion pictures and industrial design that my country needs. Good advertising would help popularize Indian firms, industrial design would improve their products and the proper application of commercial art in general would aid the progress of all industry."

Ghose already has begun applying art to Indian industry with his designs for drugget rugs, handloomed for export to America. " I try to create styles that in their colours and patterns will suit American tastes and needs," he said. " At the same time I keep the designs in the Indian spirit."

As a fine artist Ghose makes sketches and paintings of Indian scenes that now decorate many homes in America. Four of his Indian paintings—the Dance of Siva, a village near the Taj Mahal, an elephant passing a Buddhist temple and Krishna and Radha—have been reproduced on fine art greeting cards as the only series of Indian greeting cards printed in the United States. Many of his works have been exhibited throughout the country in travelling art shows.

" America has given Indian art an enthusiastic reception," he said. " The American people like not only our painting but our folk songs and dances and are coming to understand us through our culture. When the war is over I plan to give an exhibition of paintings to show Americans the Indian people, customs and traditions and the rhythm of life in India."

In addition to his fine arts, much of his commercial work uses Indian motifs. His textile and rug designs exhibited to the public in 1941 and 1942 were based on Oriental themes.

Ghose also has interpreted India to American audiences through its folk songs and dances by leading a troupe in public performances several years ago at the Brooklyn Museum in Brooklyn, a borough of New York City.

Born in Calcutta in 1908, Ghose is the son of the late Narendra Ghose, a well-known singer of Indian classical songs. His father also was an artist and Ghose began to study art when he was ten. At 14 he entered the Government School of Art in Calcutta and during his five-year course there won recognition for his sketching.

Ghose went to Europe to continue his fine arts training but after a short time in London and Paris decided to learn commercial art instead. " India has such a beautiful and mature art style that there was no reason for me to learn Occidental painting," he explained. " But I knew that I could make a contribution to India by learning commercial art so I went to America, the best commercial-art centre in the world."

In New York City in 1924, Ghose spent a year at Cooper Union, free art and engineering school, two years at the Art Students' League, and continues to study special techniques with private teachers, experts in the fields. "I am trying to take as much knowledge as possible about commercial art back to India with me," he said. "And New York City is an excellent place for a creative artist."

He began to sell drawings and paintings for advertisements to stores and manufacturers, then concentrated on his specialities of rug and textile design and fashion-photograph retouching. He spends as many as ten hours styling one negative, building shadows, removing defects, smoothing the grain and changing lines to make the photograph as perfect and attractive as possible.

Ghose is also well-known as a portrait painter and in the past 15 years has painted 350 portraits on commission. He did two paintings of President Roosevelt, which he sent to the President as birthday presents.

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One of the few industrialization engineers in the world, Hajee Haneef Abdul Razzack, after 25 years of study and work in America, is a specialist in planning the industrialization of undeveloped regions.

"I went to America to study subjects that would be helpful to India," he explained during an interview. He spent four years at the Massachusetts Institute of Technology, one of America's best engineering schools, and later worked for American firms as a mechanical engineer. To learn the financial side of industry, he spent three years in a brokerage firm on Wall Street, New York's financial district.

In 1942 the U. S. Government appointed him Principal Planning Engineer of the Industrial Engineering Division of the Board of Economic Warfare.

Razzack, who is 48 years old, was born in Madras. His father, Hajee Haneef Mohamed, was a philanthropist who not only built centres to distribute food to the poor but also established schools for girls.

At 18 Razzack was assistant manager of his father's export business but left to study physics at the University of Calcutta where he stayed until he went to America. His brother and sister and other members of his family are still living in Madras.

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Of the many Indians who have left this country for the U.S., an unusually large number of them have contributed much to

arts, sciences and the culture of that country. Sher Muhamed Quraishi is to-day one of the foremost tool designing engineers in the U.S. and has been an invaluable aid to the war production programme. This Indian, who is supervising tool designing for one of the major bomber plants in America's arsenal of production went to the United States 25 years ago. Sher Muhamed Quraishi is now in charge of tool designing for the Lincoln plant of the Ford Motor Company in Detroit.

Quraishi has not always been an engineer. Since going to the United States he has had a varied career which has taken him across the vast expanse of that country. He has taught school in Indiana and studied engineering at the University of Michigan. For a time he ran a shop in the small city of Cumberland, Kentucky, and before that was owner of a newspaper in Winston Salem, North Carolina. He once travelled from one end of the country to the other as a salesman for a perfume company.

Quraishi first developed an interest in the United States through the Americans he met in Calcutta mission schools. Born in Ambala, he spent most of his boyhood in Jullundhur, in the Punjab, where his father, Barkat Ali, taught languages to Army Officers. His father later became Chief Maulvi of the Board of Examiners at Calcutta.

During the war of 1914-18, Quraishi became a teacher of Hindustani at the Royal Cadet College in Quetta and also was a correspondent for several newspapers. In 1919 came the chance to go to America, and he became both a teacher and student at Tri-State College in Angola, Indiana.

Later he went to Detroit to teach and to study engineering. Deciding to make engineering his profession, he enrolled at the University of Michigan where, in addition to engineering courses, he studied sociology and journalism. This was in 1932. At the University of Michigan, with Rs. 1,625 loaned by faculty members, he established a " self-service " restaurant which to-day does a Rs. 3,90,000 a year business and is owned and operated co-operatively by the 800 students it serves. Sixteen thousand meals a week are served there.

A member of the American Society of Tool Engineers, Quraishi went back to Detroit at the outbreak of war to take charge of the huge tooling operation at the Lincoln plant and played a vital role in getting production started.

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Many of the industrial X-ray examiners testing vital war materials in American plants were trained by Sunder S. Sidhu,

head of the co-operative X-ray laboratory at the University of Pittsburgh, Pennsylvania.

In addition to training technicians, Dr. Sidhu works for the U.S. Army and Navy in X-raying armour plate and observing chemical reactions in dry cells to measure the cells' efficiency. He also lectures on X-ray diffraction and radiography to both graduates and undergraduates, and conducts research on metal alloys. He has been in charge of the laboratory since 1937.

The son of a farmer, Sunder Singh Sidhu, he was born in Amritsar, Punjab. While others in his family raised wheat, rice, corn and sugar-cane on their farm, Sunder attended a school where he studied English.

Sidhu went to the United States when he was 17 years old for advanced scientific education. Obtaining a degree in electrical engineering from the University of California in 1924, Sidhu travelled a year later to Pittsburgh. While taking graduate courses in physics and mathematics at the University, he worked as a field testing engineer for the Duquesne Light Company. His job was testing electrical furnaces in steel foundries.

For the next two years, Dr. Sidhu was assistant instructor in physics at the University and then a research chemist in an industrial concern where he did research on amplifiers and oscillators used for train signals.

Dr. Sidhu is a member of numerous American scientific organizations, including Sigma Ki, highest honorary scientific society in America; the American Physical Society; the Pittsburgh Physical Society; American X-ray and Electron Diffraction Society; American Industrial Radium and X-ray Society, and the American Men of Science.

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Peelamedu R. Ramakrishnan, Indian test engineer with the General Electric Company at Schenectady, New York, was born in Coimbatore, Madras, on November 10, 1917. After his early education at Coimbatore, he studied at Presidency College of the University of Madras, where he received a bachelor of science degree in mathematics in 1938. He went to England in September, 1938, for further schooling, enrolling at the University College in London. During a year at the college he took the Indian civil service examination. He went with a group from London to the United States in 1939 as an international delegate to the New York World's Fair, with the intention of staying nine days. His companions returned to England that summer, but Ramakrishnan stayed on for a protracted visit.

With the outbreak of war in September, he decided to continue his studies in the United States. As a graduate student he went to the Massachusetts Institute of Technology, from which he received a bachelor of science degree in electrical engineering in 1941. He continued at the Institute for one year, doing graduate work before going to the General Electric Company in October, 1942, as a test or student engineer.

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Bal Dattatrey Kalelkar of Wardha, a graduate student and instructor in engineering at Cornell University, Ithaca, New York State, hopes to utilize the education he has received in the United States in building up the industries of India.

At Cornell Kalelkar is specializing in automotive engineering. His research problem for the degree of Doctor of Philosophy is concerned with an engine with a twin-carburetor layout. As his minor subjects Mr. Kalelkar is studying machine design and mechanics.

Kalelkar is a son of the prominent Indian author Kaka Kalelkar. The young man began his education in the field of mechanical engineering in Bombay University where he made a first-class record, graduating from the Engineering College at Karachi in 1940. During his college career in India, Kalelkar won many prizes and scholarships and was editor of the college publication, "The Young-Engineer." He won the Birla scholarship, offered by G. D. Birla of the famous family, in the summer of 1940. He sailed for the United States to get his Master of Science degree in mechanical engineering at Massachusetts Institute of Technology, Cambridge, Massachusetts.

There Kalelkar did research work and later accepted a research fellowship at Cornell, going to Ithaca in 1941. He was appointed to the teaching staff of the College of Engineering at Cornell in 1943.

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A successful Indian importer-exporter, long resident in America, Gobindram J. Watumull, has established a fund to enable young Indians to study in Universities in the United States and to send American professors to India. The Watumull Foundation is a partner in his firm.

The foundation has been augmented by contributions by Mr. Watumull, his wife, his older brother and his nephew, Ramchand Watumull.

There are 13 awards and the recipients of the annual stipends

are made by a committee of nine men, including two University Presidents and experts in the specific fields.

A Professor in an Indian University or a recognised Indian scientist will get a travelling fellowship to study his speciality for a year at various American Universities. He will receive $250 a month for living expenses.

Twelve graduates of Indian colleges and universities will be picked from approximately 1,000 applicants to study medicine, sanitation, public health, agriculture, engineering, hydraulics, education, mining or economics for two years in the United States. Each will receive travelling expenses, tuition and laboratory fees and an allowance of $100 or $150 monthly, depending on need.

The foundation already supports three special lectureships held by Dr. Taraknath Das, author and publicist, at Catholic University, Washington, D.C. : Dr. K. L. Shridharani, sociologist, at Columbia University, and O. Rehman, lecturer on Modern India and Indian Culture, at American University, Washington, D.C.

Mr. Watumull was born in Hyderabad, Sind Province, one of ten children of a building contractor. After graduation he served as a Government clerk in the Department of Public Works. In 1907, he went to Honolulu to manage a branch of a large Oriental export-import business established by his elder brother, Jhamandas, who has now retired and lives in Hyderabad.

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A politician is a man who thinks of the next election ; a statesman is one who thinks of the next generation.—HENRY GRADY.

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Definition. A bank is an institution where you can borrow money if you can present sufficient evidence to show you don't need it.—HARRY HARSHFILD (*American Wit*).

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Never worry about what people are thinking about you. They are not thinking about you . . . They are wondering what you are thinking about them.—Quoted in *The Universe*.

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A man can fail many times, but he isn't a failure until he begins to blame somebody else.—*Buffalo News*.

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Regret is an appalling waste of energy ; you can't build on it ; it's only good for wallowing in.—KATHERINE MANSFIELD.

WORD TESTS

If you found an abalone would you eat it, play it like a saxophone, drink it or throw it away as something worthless ?

If you were given a zither would you receive (1) a reprimand, (2) a priceless jewel, (3) a musical instrument or (4) a new type of shot-gun ?

If you were asked to resuscitate an organisation would you be expected to form one, reorganise one, disband it or bring it back to life ?

If you were given a machete, what would you have (1) an oil painting, (2) a picturesque Balkans costume, (3) a knife, or (4) a high-speed motor boat ?

If your savings were said to be incalculable would you be very rich or very poor ?

You all know that a husband is a man married to a woman. Can you think of any other " husband " ?

1. A French word—naive—often encountered in English. Were you said to be naive, what would be your reaction—pleased ?—resentful ?—or downright annoyed ?

2. If you were bilingual, what would you be able to do ?

3. You are told your friend is studying nephology. What, do you imagine, is he studying ?

4. Actions attributed to an acquaintance are described as nefarious. Would you be glad, disappointed, alarmed or disgusted ?

5. You are told Mr. So and So is a prudent person. What does this mean ? Is he rude ?—Courteous ?—Cautious ?—Or a hypocrite ?

6. And, incidentally what *is* a hypocrite ?

One whose critical faculties are over—or under—developed ?—Or what ?

(*Answers on page 122*)

POSTAL PROGRESS

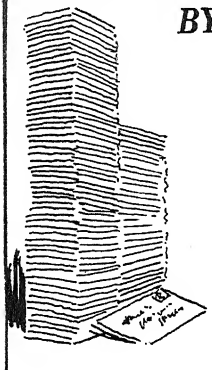
HOW long ago, do you think, India's first postal service started? It is shown in records of early times that Mohammad Ibn Tughlak saw the need for some system of communications as far back as the 14th century and he started a service of runners.

Under the Moghuls an excellent courier service was built up. Akbar had post houses built every ten miles along the main roads for his couriers and horses. But eventually this service broke down and it was not until 1766 that a regular system was restored for the carriage of Government mails.

In 1839 India's telegraph system was started by a doctor of the Indian Medical Service whose hobby was telegraphy. This country then had the distinction of having the longest line of telegraph in the world—an experimental 21 miles of wire. By 1860 all India's main towns were telegraphically linked-up.

Nowadays nearly 28,000,000 telegrams are transmitted every year over the Indian system. At one period the Bombay office alone handles as many as 30,000 a day. There is a big expansion programme to handle the heavy tele-communications traffic. Much of the equipment is being made in the workshops of the Posts and Telegraphs Department.

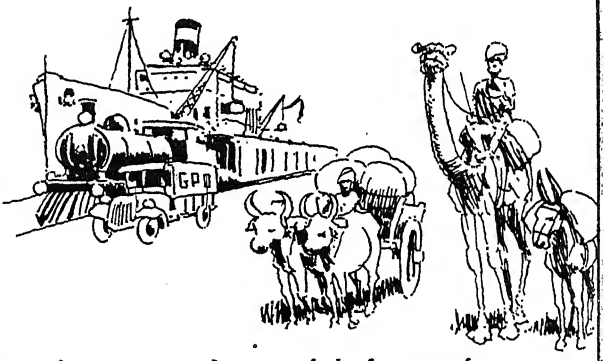
BY TRAIN & RUNNER



INDIA'S Postal Service handles well over one and a half thousand million articles every year and covers over 157,000 miles. It serves 400,000,000 people spread over 700,000 towns and villages. It is a great public utility concern with many different functions.

Business transacted by the Post Office is immense. In one year alone over 57,000,000 money orders—totalling Rs. 147 crores of rupees—were sent by members of the public.

India's mails go by train, motor, steamer, bullock carts, horses, mules and camels.



This variety of transport used is one of the features of the postal service. There are 157,000 miles of route—24% covered by rail, 17% by motor and 54% by runners and small boats.

The real hero of the Indian Postal Service is the runner. These men have a magnificent record of devotion to duty. They face storms, floods, snows, wild beasts—and sometimes robbers. They all know that the mail must go through.

Wanted: 20,00,000 Teachers

"If you are planning for one year, plant grain... If you are planning for a hundred years, plant men."

For a long time now dissatisfaction with the existing system of education has been widespread in India. It is not necessary to diagnose the causes of discontent or to recount the defects of the system; this has been done with tragic repetition by statesmen and politicians, economists and administrators, teachers and students. Few will care to contest the view that the present-day educational system is unsuited to the needs of modern India and most people will agree that what is needed is not the overhauling and extension of the existing structure, but a new and vast reconstruction. A few facts will indicate the size of the problem. Over 85 per cent. of the population of India is illiterate. There are about 60 million children between the ages of 5 and 14; of this enormous number who ought to be attending school only about 12 million were getting some sort of education in 1936-37. Of these 12 million children attending school nearly half are in the Primary Class I and less than 14 per cent. of those who enter school remain in it for five years, the minimum period during which permanent literacy is likely to be attained. The result is that over 85 per cent. of money spent on primary education is very largely wasted. Things are no better at the top. While Canada, with a population of $8\frac{1}{2}$ millions, has 13 Universities, India has only 19 Universities for her population of 400 millions. If these figures are disheartening from the point of view of quantity, conditions are still more depressing when the quality of education is considered. The curriculum is over-academic, the methods of instruction are often dull and ineffective, and the whole system is over-ridden by examinations. There is no balanced development of mind, body and character, and in most cases the lot of the Indian student is unemployment or unsuitable employment, and a deep sense of frustration.

Such is the situation which the Central Advisory Board of Education have attempted to meet in their Report on Post-war Educational Development in India.

The Board's Plan is by no means a hasty improvisation. Ever since the constitution of the Board in 1935 the whole system of education has been under close and careful scrutiny and a number of special committees have been set up from time to time to examine and report on many important aspects of education. The final Plan has emerged out of these prolonged labours. Nor can it be said with justice that the Plan is an attempt to impose a westernised system of education on India. It has educational ideas and principles which can no doubt be applicable anywhere; but the peculiarity of Indian conditions has not been lost sight of. The representative Indian character of the Board will be obvious to those who care to analyse its composition. It must also be said that the Board do not consider their Plan to be ideal and infallible, nor do they expect that it should be imposed over the length and breadth of this vast country; their object, on the other hand, is strictly limited and practical inasmuch as they have merely indicated in broad outline the minimum educational requirements of India and the time and expenditure needed to realise these ends, leaving the provincial areas to apply these general principles to their own particular needs.

What, in brief, is the Board's Plan for Post-war Educational Development in India ? It is a fairly comprehensive structure, whose various parts are closely integrated. All these component parts are essential to the general design and purpose and it would detract from the harmony and utility of the new edifice if some of these parts were left out. It will take forty years to build the new educational system and when it comes into full operation the annual cost of working it will be in the neighbourhood of 300 crores of rupees. The complete picture will be something like this.

The State will create, maintain and co-ordinate a national system of education open to all its members between the ages of 3 and 40. Between the ages of 3 and 6 there will be nursery schools and classes for children whose parents wish to utilise a very important period in the child's life by sending him to an attractive physical and social environment. At this stage all the teachers will be women and education will be free but it will be education through social experience rather than by formal instruction. Beyond this pre-primary stage there will be universal, compulsory and free education for all boys and girls between the ages of 6 and 14, a system of basic education, which will be the central and most expensive feature of the whole scheme. Basic Education will be divided into a junior stage

(primary) from 6 to 11 and a senior stage (Middle) from 11 to 14. The new principles of learning by doing and centring instruction around useful and interesting crafts will give a distinctive character to education at the Basic stage, the aim of which should be to ensure permanent literacy and a fair preparation for citizenship. If a country needs intelligent citizens, it also requires the services of skilled workers, experts and leaders, and upon the quality of these the greatness of a nation will largely depend. High Schools, Universities and institutions imparting technical, commercial and Art education will cater for these needs. In its range, variety and quality higher education will be different from what it is to-day; it will produce a cultured individual, adequate in his own mental, physical and moral development and well-trained for employment and for service to society. Adult education is another formidable problem in India and the work to be done in this connection is immense; a vast number between the ages of 10 and 40 has to be made literate; those on the verge of literacy have to be kept literate by creating an attractive educational environment; and for all adults there must be various educational facilities throughout life for education should be a life-long process, a living experience which people need constantly. The resources of the State and the voluntary efforts of the people must combine in a mighty onslaught against illiteracy which should be liquidated within 25 years; and when that is done a proper system of adult education can be set up.

This is what the Board's Plan intends to do for the education of all citizens between the ages of 3 and 40. It is an ambitious programme, but by itself it is not enough. Other things will be required to make it successful. There is the training of teachers which is, in a way, the crux of the whole problem. Over 22 lakhs of teachers will be required to bring the scheme into full operation; upon the ability and character of these teachers will depend the quality of education and we cannot be too careful in selecting the right type of teacher. The health and physical welfare of students will be looked after by a large army of doctors, nurses and physical instructors. A great deal of thought has been given to the planning of social and recreative facilities, which are indispensable for training people in the process of social adjustment. Special care will have to be taken of children who are physically and mentally handicapped; the use of scientific technique and up-to-date methods can alleviate their misfortune and humanity demands that these unfortunates should not be neglected. Efficient Employment Bureaux will be to help those who leave

schools and colleges to find suitable employment. And lastly there must be brought into existence enlightened administrative agents who will be prepared to serve the educational system of to-morrow with intelligence, integrity and selfless devotion.

These are the bare outlines of the Board's Plan for post-war educational development in India. There is much else of value in the Report. This brief summary may conclude by emphasizing three ideas. In the first place the claims of social justice and equality of opportunity have been uppermost in the minds of those who made the Plan, and these claims are to be met by insisting on selection by merit for entrance into higher institutions and by a generous provision of scholarships and maintenance allowances for poor students of sufficient merit. Secondly, it is almost an article of faith with the members of the Board that the teacher is all important and the only way of improving education is to improve the quality of the teacher. For this the teacher must be well-trained, well-paid and sufficiently contented with his conditions of service. He will not be happy and contented unless Society learns to value and respect him and to give him an adequate reward for his labours. To-day in some parts of the country there are teachers who have to work at a salary of less than Rs. 10 per mensem ; the Board have laid down a minimum salary of Rs. 30 per mensem, a considerable advance on the present conditions, but, perhaps, not great enough to attract men of right calibre. Thirdly the quality of education is of paramount importance and it must not be lowered in order to achieve superficial results in quantity or speed. Little learning is often a dangerous thing and bad education is worse than no education. The Board, it must be remembered, have prescribed the minimum requirements of a system of national education for India, and between what now exists and the attainment of minimum standards prescribed by the Board, there is really no halfway house. To speed up the process of universal compulsory education by the employment of untrained and inefficient teachers would be disastrous and to choose only a few of the features of the Board's Plan would result in the absence of integration and harmony and the continuation of the present-day haphazard character of Indian education.

The task of reconstructing India's education is urgent and it cannot be accomplished without the effort of a great army of willing workers who have caught sight of the vision before them and who have faith enough to pursue that vision. Perhaps the men of the army and of other fighting services will provide not a

small part of these volunteers and workers ; their enthusiasm for progress and enlightenment would certainly go a long way towards putting the new educational system on its feet. Since the days of Disraeli many statesmen have believed in the maxim that upon the education of the people of a country the fate of that country depends. This maxim was never more true and relevant than in the present crisis of civilisation and especially in the present situation in India where an aspiring democracy has to cope with the ugly facts of ignorance, superstition and prejudice. Nothing short of the Board's Plan will give to India her rightful place in the society of civilized nations. But it must also be remembered that men are not machines and a good educational system cannot be a short-term process of large-scale production. And in approaching the task ahead of us it is well to hearken to the ancient wisdom of the Chinese saying :

" If you are planning for one year, plant grain ;
If you are planning for ten years, plant trees ;
If you are planning for a hundred years, plant men."

It may not be necessary to take as many as a hundred years for carrying out an educational plan, but it is well worth remembering that men are more than grain and trees and, one may add, machines.

Wit of the Ancients, Moderns and Others

SIR ARTHUR CONAN DOYLE based his character Sherlock Holmes on the personality of Dr. Joseph Bell, medical lecturer at Edinburgh University, who was intensely annoyed at his immortalization. Still, he must have been rather like the character he suggested if this incident is typical.

A patient Dr. Bell has never seen come in for treatment. The doctor looked at him for a minute and then said quietly :—

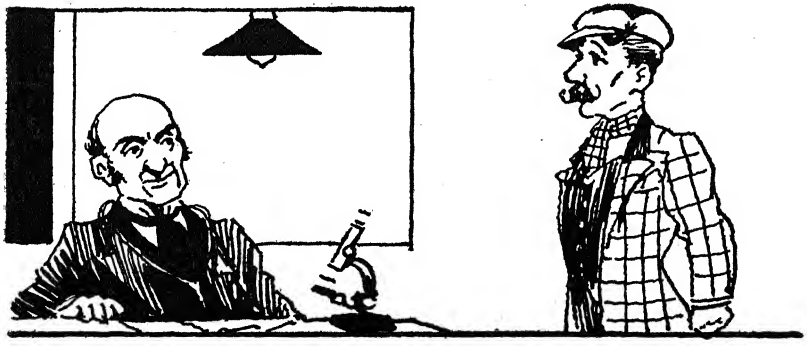
"You've served in the Army ? "

"Yes, sir."

"You were an N.C.O. in a Highland regiment and have just been discharged after a period of service in Barbados."

"That's right, sir," the amazed patient said.

"Elementary, gentlemen," commented Dr. Bell. "He keeps his hat on, although he is respectful. Clearly a soldier, as soldiers are used to not uncovering before authority. Clearly, too, he has not been long discharged, else he would have acquired civilian ways. He has an air of authority, so he must have been an N.C.O. ; a Highland accent, so he is presumably a Highlander. He suffers from elephantiasis, which is a West Indies disease, and the only Highland regiment in the West Indies is stationed in Barbados.



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King Umberto of Italy received a petition from a prisoner who had been sentenced to a long term, begging that the rest of his

sentence might be remitted. The Minister of Justice had written a marginal note on the petition : " Pardon impossible. To be left in prison."

The king read the petition and altered the position of the full stop : " Pardon. Impossible to be left in prison." And under this sentence the king placed his signature.

* * *

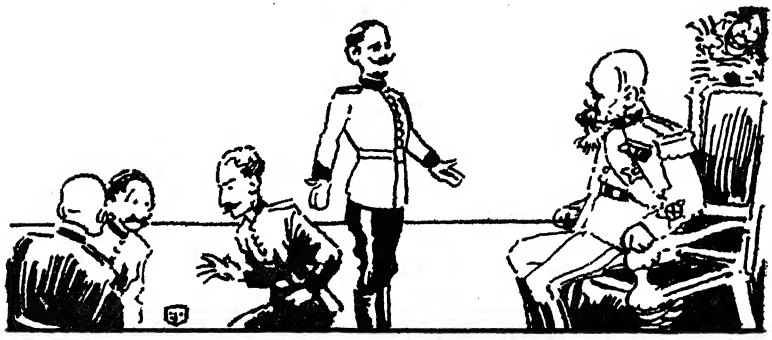
A Young American found himself seated next to the eminent Chinese, Wellington Koo, at a diplomatic banquet. Completely at a loss as to what to say to a Chinese, this young man, with a touch of genius said, " Like soupee ? " Dr. Koo smiled and nodded. Several moments later, when called upon to say a few words, he delivered a brilliant talk in flawless English, sat down while the applause was still resounding, turned to the young man and said, " Like speechee ? "

* * *

The Emperor Joseph II had sentenced four deserters to death, but, relenting before the execution, decided that only one of the men was to die. The four were ordered to throw dice and he who cast the lowest number was to hang. Three obeyed, but the fourth refused even to touch the dice box. The Emperor was told of the man's refusal, and called him before him, asking him why he refused to throw dice.

" Your Majesty," said the man, " I do not want to add a second crime to my first one ; playing dice is forbidden in Your Majesty's realm."

The Emperor laughed and pardoned all four.



A woman's most attractive time is at the age of seven: At seven she sits on a man's knee without hesitation, affected or genuine, and without putting the knees to sleep. She enjoys listening to him, encourages him to talk, and believes any story he tells. Her curiosity over what became of his hair is sometimes embarrassing, but her sympathy with him in his loss is unquestionably sincere. While unduly interested, perhaps, in the state of his exchequer and never too proud to accept pecuniary aid, she is no gold-digger whose gratitude is measured by the amount of the contribution. For as little as two copper cents she will bear-hug his spectacles all out of shape, and he feels sure she means it. At seven she is more or less front-toothless, to be sure. But then she doesn't yet chalk her nose or paint her nails, and she hasn't begun to use tobacco. All in all, a charming age!—*New York Times.*

* * *

A young man in London writes—"I have saved £100, but what can I do with it? If I only had £1,000, I could start a business of my own."

He seems to be in the wrong frame of mind. That phrase will not help him—"If I only had." If he had £1,000, he would probably say—"If I only had £10,000!"

When the founder of the huge Heinz business started, he hadn't £100. I don't think he had £10. He started his worldwide business in a kitchen.

When the Wright brothers started, they hadn't £100. They had only a small wooden shed, where they earned a living repairing bicycles. But they built the first airplane and became the founders of Aviation.—*Efficiency Magazine.*

* * *

In his articles in "Frontiers," a magazine of natural history, Archibald Rutledge tells many delightful stories of animals at play. "Late one afternoon, at a solitary lagoon on a plantation next to mine, I discovered five otters having a sliding match. There were evidently two parents and three half-grown children. Overlooking the lagoon was a bluff about 15 feet high, with a slope of black mud from its crest to the water. To use their improvised toboggan, each would lie flat on his stomach, give a push with his hind feet, and go zipping down the bank.

On striking the water, they performed all kinds of graceful acrobatics before returning to the shore to slide again. And one thing appealed to me as rather humanly touching. One of the youngsters was smaller than the other two, and when his

turn came the rest of the family invariably paused in their frolic to see how the " little one " managed.

* * *

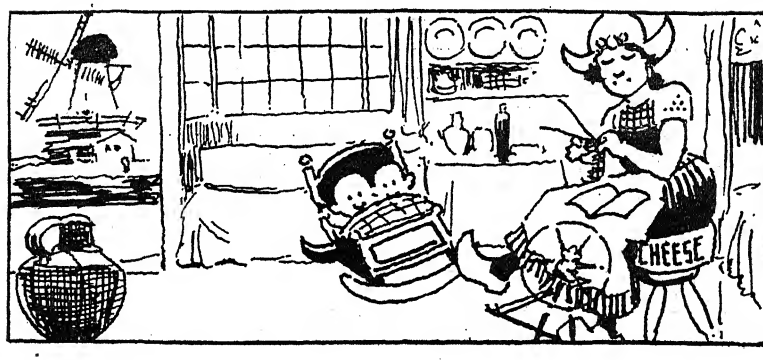
A Lady, after performing, with the most brilliant execution a sonata on a pianoforte, in the presence of Dr. Johnson, turning to the philosopher, took the liberty of asking him if he was fond of music. " No, madam," replied the doctor ; " but of all noises, I think music is the least disagreeable."

* * *

One of the most remarkable prophecies ever recorded was made by Thomas Gray, the poet. These lines were written by him in 1737.

The time will come when thou shall't lift thine eyes
To watch a long drawn battle in the skies
While aged peasants too amazed for words
Stare at the flying fleets of wondrous birds
England, so long the mistress of the sea
Where winds and waves confess her sovereignty
Her ancient triumphs yet on high shall bare
And reign the sovereign of the conquered air.

* * *



A Dutchman was expatiating on the folly of giving women the vote. He declared that in Holland there was greater efficiency among the female sex where they did not possess that doubtful privilege. He pointed to the fact that the Dutch woman sits with one foot on the spinning wheel or churn and with the other she rocks the cradle containing twins, with her hands she knits socks for her husband, while on her knee rests a book from which she is improving her mind by study. And all the while she sits on a cheese, pressing it for market.

Officialdom is apparently the same the whole world over. When Horace Smith, an American merchant seaman, applied for a new petrol ration book, he was told he must advertise the loss.

" But I lost it in the Mediterranean," he said.

" Makes no difference," was the reply. " It's what the rules say."

Later the following advertisement appeared in a Pennsylvania newspaper : " Lost in the Mediterranean sea, a petrol ration book. Horace A. Smith, 574, Congress Street, Phillipsburg."

There have been no replies.

* * *

During a question period following a lecture, a man arose and put a foolish query to the speaker. The latter replied :

" The logic of your question makes me think of another. Can you tell me why fire engines are always red ? You can't ? Well, fire engines have four wheels and eight men. Four and eight are 12. Twelve inches make a foot. A foot is a ruler. Queen Elizabeth was a ruler. The QUEEN ELIZABETH is the largest ship that sails the seven seas. Seas have fish. Fish have fins. The Finns fight the Russians. The Russians are red. Fire engines are always rushin'. Therefore, fire engines are always red.

" I hope this answers your question also."

* * *

Many years ago, an ingenious plan was adopted by the Grand Duke of Tuscany to rid Florence of beggars. It was proclaimed that every beggar who would appear in the Grand Square at a time mentioned would be provided with a new suit of clothes, free of cost.

At the appointed hour the beggars of the city assembled, and the Grand Duke, causing all the avenues to the Square to be closed, compelled them to strip off their old clothes, and gave each one, according to promise, a new suit. In the old clothes thus collected, enough money was found concealed to build a fine new bridge over the Arno ; and the city for the time being was relieved of the beggars by whom it had previously been overrun, as nobody would give anything to the well-dressed individuals who implored charity.

* * *

Illustrious Brother of the Sun and Moon :—Behold thy servant prostrate before thy feet ! I kowtow to thee and beg that of thy graciousness thou mayest grant that I may speak and live. Thine honoured manuscript has deigned to cast the light of its august countenance upon me. With raptures I have perused it. By the bones of mine ancestors ! Never have I encountered such wit, such pathos, such lofty thought. With fear and trembling I return the writing. Were I to publish the treasure thou hast sent me, the Emperor would order that it be made a standard of excellence and that none be published except such that equalled it. Knowing literature as I do, and that it would be impossible in ten thousand years to equal what thou hast done, I send thy writing back by guarded servants.

Ten thousand times I crave thy pardon.

Behold ! My head is at thy feet and I am but dust.

Thy servant's servant,

WANG CHIN, *Editor.*

* * *

There are two reasons for worry : you're either successful or you are not successful. If you are successful, there is nothing to worry about ; if you are not successful there are only two things to worry about. Your health is either good or you are sick. If your health is good there is nothing to worry about ; if you are sick there are only two things to worry about. You are either going to get well or you are going to die. If you are going to get well there is nothing to worry about ; if you are going to die there are still only two things to worry about. You are either going to Heaven or the other place. If you are going to Heaven there is nothing to worry about ; if you are going to the other place you will be so busy shaking hands with your old friends that you won't have time to worry at all. So, why worry ?—*School Magazine, Benedictine Priory, Ireland.*

A famous actor, Southern, passing an ironmonger's, and seeing a lazy-looking young man behind the counter, entered and said: "Have you got the second edition of Macaulay's HISTORY OF ENGLAND?"

"No, sir, this is an ironmonger's."

"Oh, never mind about the fly-leaf, that does not matter."

"Yes, but we don't sell books here."

"Oh, wrap it up in anything. The sort of thing you would give your own mother, you know."

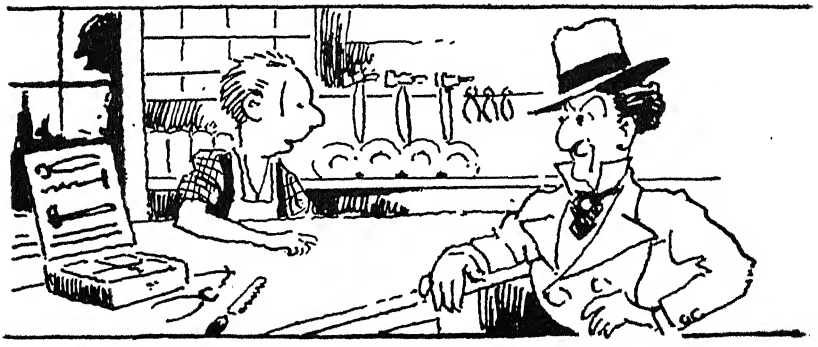
"I tell you we don't sell books," and here the man shouted into Sothern's ear. "NO BOOKS. IRONMONGER'S."

"Thank you very much, I'll wait," and with a bland smile, Sothern sat down. The shopman rushed into the inner office. Presently he returned with the proprietor.

"What do you want?" asked the latter sternly.

"I want a small file—about so long," replied Sothern quietly.

"Certainly, sir," said the proprietor, giving his assistant a mingled look of indignation and contempt.



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Dr. Clyde R. Miller of Columbia University has a method of disposing of dull books sent him by publishers. He immediately forwards the book to a friend with a note purporting to be from the book's author. It says: "I hope you will like the references to yourself in this volume and that you will not mind the free use I have made of your name." Dr. Miller likes to think of the recipient persevering to the weary end in puzzled hunt for personal mention.

Harmodius, descended from a long line of noble families, once reviled Iphicrates, a shoemaker's son who had become a general, for his mean birth. Iphicrates replied :

" My nobility BEGINS with me. Yours ENDS with you."

* * *

Izaak Walton would turn over in his grave if he could hear George Elsworth of Springfield, Massachusetts, pop off about his pet theories on the art of angling.

Elsworth, who has built up quite a reputation by catching fish with such unorthodox gadgets as rat traps, shoe horns, hair curlers and toy airplanes, contends that it's not the bait that counts.

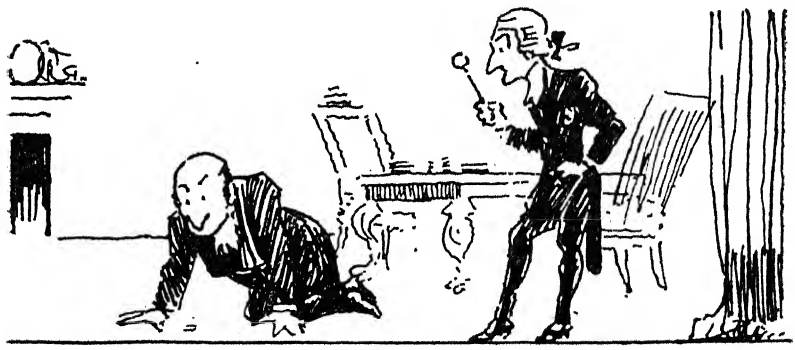
" When a fish is hungry," Elsworth philosophises, " he'll go for anything—even an old toothbrush. If he isn't, there is nothing you can do about it."—*American Weekly*.

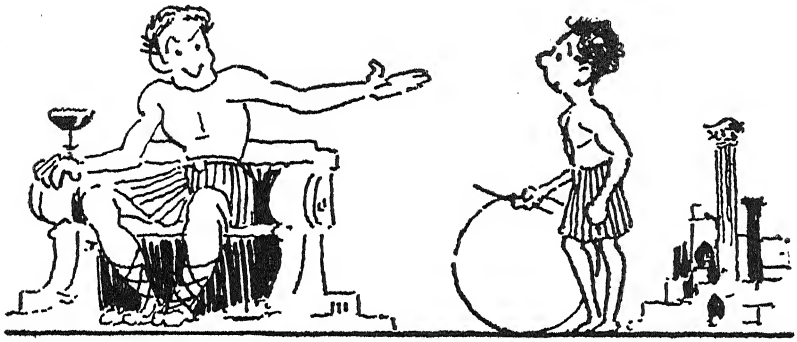
* * *

Talleyrand and James von Rothschild, the fabulously wealthy financier, were once playing a game of cards. Rothschild accidentally dropped a small coin on the floor. He got down to look for it, searching on hands and knees to see where it had rolled.

" Ah," murmured Talleyrand, " surely the House of Rothschild is built on millions of such pieces."

" That is why I am looking for it," returned Rothschild; " I am never sure which coin may be the keystone of the edifice."





"My boy," Themistocles, the soldier and statesman, once said to his young son, "you are the most powerful person in all Greece."

"How can that be?" asked the lad.

"Because," answered Themistocles, "the Athenians command all of Greece; I command the Athenians; your mother commands me; and you command your mother!"

* * *

In the 16th century, before Japan had closed herself to foreigners, she was ruled for the Emperor by Hideyoshi, a would-be Napoleon. He had dreams of Asiatic conquest as extensive as those of Japanese militarists to-day. After he had unified Japan, he decided that he would next take over China. Accordingly, he sent a message to the Chinese Emperor demanding submission. The answer was peculiarly Chinese.

The Emperor sent an envoy to Hideyoshi with an imposing document rolled up in a scroll. Hideyoshi was jubilant. A magnificent ceremony was arranged, and with appropriate fanfare the envoy delivered the scroll.

Imagine Hideyoshi's surprise when the scroll was unrolled and he read that the Chinese Emperor was pleased to appoint Hideyoshi "King of Japan."

* * *

Stephen Leacock tells this story: "Years ago when I first got my Ph.D. degree, I was inordinately proud of it, and used to sign myself 'Dr. Leacock' in season and out. On a trip to the Orient I put my name down that way on the passenger list of the liner. I was just getting my things straight in my cabin when a steward knocked and said: 'Are you Dr. Leacock?' 'Yes,' I answered 'Well, the captain's compliments, doctor,

and will you please come and have a look at the second stewardess's leg ? ' I was off like a shot, realizing the obligations of a medical man. But I had no luck. Another fellow got there ahead of me. He was a Doctor of Divinity."

—*Thesaurus of Anecdotes.*

* * *

A trader with the Indians coveted an ornate ring worn by a certain Navajo Indian. After transacting some business with the Red Man he pointed to the ornament and inquired insinuatingly, " Don't you want to give me that ? "

" Why me do that ? " demanded the Navajo.

" Because," replied the trader, " it is like my friendship for you—it has no end."

" Huh," exclaimed the Indian, " I got reason to keep ring."

" Why ? " asked the trader.

" Because," replied the deeply discerning Red Man, " ring is like my friendship for you—it has no beginning."

—*Christian Science Monitor.*

* * *

In a message to the staff of the Board of Trade, the President suggested " That we in the Board of Trade should make a resolution not to misuse the English language." It would be startling and inappropriate, he said, to find in the minutes a sentence like : " Consider the lilies of the field how they grow ; they toil not neither do they spin . . . yet even Solomon in all his glory was not arrayed like one of these."

" On the other hand, I think, without incurring a charge of being precious, we might avoid this sort of thing—." Then followed the President's idea of a Whitehall word-spinner's version of the same passage :

"When due consideration has been given to the fact that the target programme of the Lily Group has been achieved with virtually no drain upon the manual labour pool and without taxing in anyway even the surplus spindle situation, it is noteworthy that the natural product may be said, without qualification, to surpass both in stability and exportability the highest grade woven textiles as supplied to the Jewish Royal Family."

* * *

THOUGHTFUL VERSE

The Lord gave us two ends to use ;
One to think with, one to sit with.
The war depends on which we choose ;
Heads we win, tails we lose !

—Pennsylvania Guardsman.

* * *

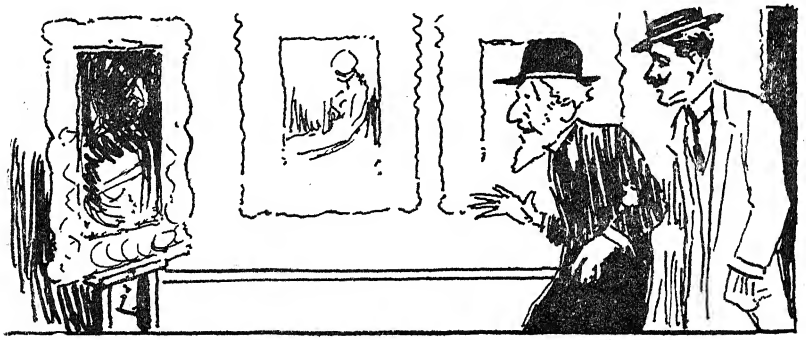
Paul Cezanne never knew that he was "the father of modern painting." Having struggled 35 years without recognition, the shy old man was living in oblivion at Aix—giving away masterpieces to indifferent neighbours.

Then a discerning Paris dealer gathered several of these canvases and presented the first Cezanne exhibit. The great of the art world were stunned : they saluted a Master.

Cezanne arrived at the gallery on his son's arm. He gazed wonderingly at his paintings. Tears came to his eyes.

"Look," he whispered to his son. "They've *framed* them ! "

—Robert Offergeld.



A New Yorker, pointing to a hillside field, complimented the New Englander on his corn.

" How do you plow that field ? It looks pretty steep."

" Don't plow it ; when the spring thaws come, the rocks rolling down hill tear it up."

" That so ? How do you plant it ? "

" Don't plant it really. Just stand in my back door and shoot the seed in with a shot-gun."

" Is that the truth ? " asked the New Yorker.

" No. That's conversation."

* * *

When the other fellow is set in his ways, he's obstinate; when you are, it's just firmness.

When he doesn't like your friends, he's prejudiced ; when you don't like his, you are simply showing that you are a good judge of human nature.

When he tries to treat someone especially well, he's toadying, when you try the same game, you are using tact.

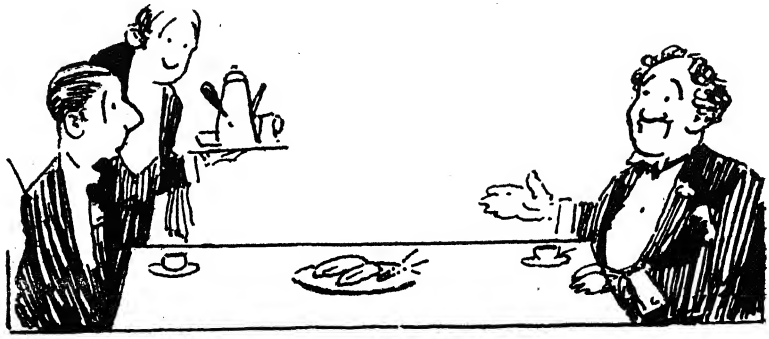
When he takes time to do things, he is dead slow ; when you do it, you are deliberate.

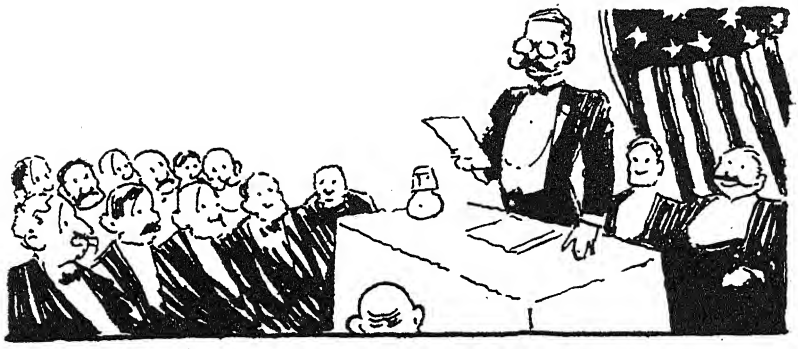
When he picks flaws in things, he's cranky ; when you do, you are discriminating.

* * *

Rossini, the famous 18th century actor, had dined thinly, for his host's table afforded a snip of this, a snack of that. As coffee was being served, the host said, " I hope you will soon do us the honour of dining here again."

" Certainly," said the hungry Rossini briskly. " Let's start now."





Theodore Roosevelt, while addressing a large Progressive Republican gathering, criticised the methods of the Democratic Party. On concluding his address a Democrat in the audience, who objected to some of Mr. Roosevelt's remarks, asked : " Why are you a Republican ? "

" Because my father and grandfather were both Republican," was the reply.

" What would you be if your father and grandfather had been horse-thieves ? asked the Democrat.

" I'd be a Democrat," Mr. Roosevelt replied.—*Irish News.*

* * *

In Switzerland recently I came across an amusing example of misrepresentation by mistranslation. A famous religious Order were announcing charity and tolerance in the following words : " The Brothers of Misery harbour every kind of disease and have no regard for religion."—*Sunday Times.*

* * *

During the history lesson the teacher pointed out to the class that a surname often indicated the trade of the ancestors of those who bore the name. He gave the obviously simple examples of Smith, Taylor, and Baker.

Then he questioned one of the boys :—

" What were your ancestors, Webb ? "

" Spiders, sir ! "

* * *

Ideas are funny little things. They won't work unless you do.—*Columbia Record.*

An old-fashioned Hebrew employer remonstrated when one of his employees asked for a raise on the ground that he worked too hard. "Why," protested the employer, "you have an easy time of it. You do not work at all. Look! There are 365 days in a year. Eight hours each day you sleep. That makes 122 days, leaving 243 days. Eight hours of every day you have all for yourself. That leaves 121 days. I give you an hour for lunch every day and that amounts to 15 days more, leaving 106. You do not work on Sundays—52 more days off, leaving 54. You get Saturday afternoons off—another 26 days, leaving 28 days. You have two weeks for vacation every summer and you take off about a week for sickness. Only seven days a year to work—and New Year's, Washington's Birthday, Decoration Day, July Fourth, Labour Day, Thanksgiving Day and Christmas are holidays. Besides you take Yom Kippur off. I should give you a raise? You owe me money!—*Abbott and Costello, Comedians.*

* * *

With a wink at the other passengers the smart young man said to a yokel in the corner seat: "Let's have a game of riddles to pass the time. If I ask one that you can't guess you give me half a crown, and I do the same to you."

"All right," said the yokel, "but as you're better educated do you mind if I only pay a shilling?"

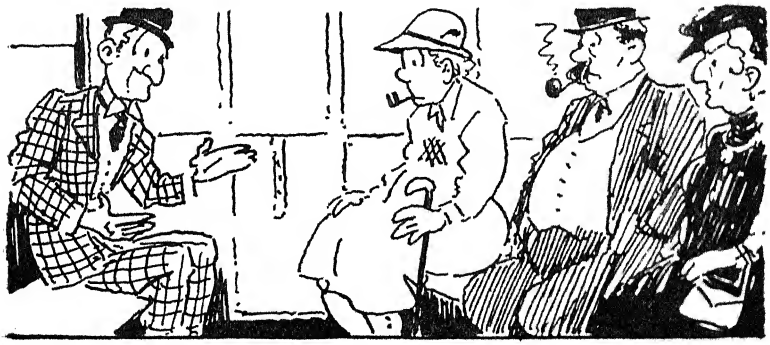
The young man agreed and the yokel, invited to begin, asked: "What animal has three legs walking and two flying?"

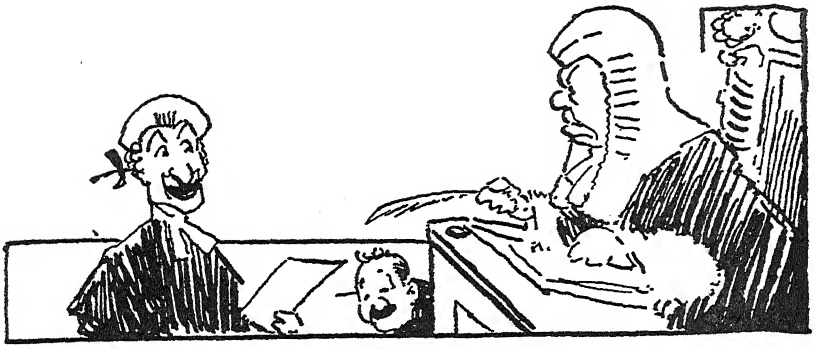
"I don't know," replied the young man.

"Here's half a crown. What's the answer?"

"I don't know either," said the yokel.

"Here's your shilling."





As a young barrister the Earl of Birkenhead protested a judge's obvious sympathy for his opponent's side. The judge rebuked him and their remarks developed a distinctly personal flavour. Finally the exasperated judge exclaimed, "Young man, you are extremely offensive."

"As a matter of fact," said the Earl, "we both are. But I am trying to be, and you can't help it."

—WINSTON CHURCHILL in *Great Contemporaries*.

* * *

Stewart Edward White, in his book *Speaking for Myself*, reports the following merry scene: "Some years ago, in Alaska, I saw three ravens flying overhead. One of them carried in his beak what looked like a small fish. After a dozen flaps of the wing, with a quick jerk, he transferred it to his claws. A few more flaps and he chucked it forward and grasped it with his beak again. Each time he made the exchange the other ravens dashed at him, yelling at the tops of their voices, trying to rattle him into missing that fish.

"He was remarkably quick and accurate, but after a time he did drop it. The other two plunged down and one managed to snatch it before it reached the ground. He proceeded to do exactly as the first had been doing, while the other two tried to make him miss.

"Soon they came so near that I could see the object. It was a small stick. This was no mere struggle for a titbit. It was a game of tag, of miss-and-out, with definite rules."

To see wild things playing "just for fun" is to realize a touching kinship of their lives with ours.

* * *

Gerald was Aunt Matilda's favourite nephew and she was planning to send him a birthday gift.

"What did you give him last year ?" asked her companion.

"A cheque," said Auntie, "and, poor boy, he told me he couldn't find words with which to thank me."

"And what are you giving him this year ?"

"A dictionary !"

* * *

In 1840 a Viennese author-actor by the name of Hans Wurst (John Sausage !) was appearing in a comedy entitled *The Extraordinary Hunter* and satirized rather cruelly the conjugal sentiments of his contemporaries.

"How are you, my friend ?" one man asks another.

"Not very well. Since I saw you last, I've been married."

"My compliments. You must be very happy."

"Not as happy as you think. I married a wicked woman."

"Oh, that's too bad."

"Not as bad as you think. She brought me a dowry of £5,000."

"That must be a great consolation."

"Not as great as you think. With the money I bought a flock of sheep, and they all perished."

"How terrible."

"Not as terrible as you think. I sold the wool at a profit as great as the original investment."

"Then you lost nothing in the deal."

"I lost more than you think. The house in which I kept money burned down to the ground."

"What a disaster !"

"Not as disastrous as you think, my friend. You see . . . my wife was inside !—ANDRE RIVOLETT in *Conferencia*.

* * *

Some years ago a man hired a small hall in a country town in the South of Ireland. He engaged no assistance, but a month before the date for which he had rented the hall he put up signs all over the town stating in large letters : "He is coming."

A week before the fateful night, that was replaced by : "He will be at the Town Hall on April 1st." The day before the event there was the simple legend : "He's here." The following morning : "He will be at the Town Hall to-night at 8 o'clock."

That night the man himself sat in the box office and sold tickets at 1s. a head to a capacity audience. When the lights went up inside, however, all the crowd could see was a huge sign reading : "He's gone."

Those people who are always improving never become great. Greatness is an eminence, the ascent to which is steep and lofty, and which a man may seize on at once by natural boldness and vigour, and not by patience and wary steps.—HAZLITT.

* * *

"Look here, I'm tired of calling
every day for my money."
"Would Friday suit you?"
"Yes, it would."
"All right then, call every Friday."

* * *

When Gibbon, the historian, was courting Lady Elizabeth Foster, he had a rival, a famous doctor. On one occasion, the doctor became tired of Gibbon monopolizing the conversation, and said:

"When you have made Lady Elizabeth ill with your nonsense, I will cure her."

"When Lady Elizabeth is dead from your prescriptions," flashed back Gibbon, "I will immortalize her."—*English Digest.*

* * *

To force myself to earn more money, I determined to spend more. This, I understand, is known to the economists as the Law of Demand and Supply.—JAMES AGATE.

* * *

Nothing is ever done in this world until men are prepared to kill one another if it is not done.—G. BERNARD SHAW.

* * *

The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.

—G. BERNARD SHAW.

* * *

Here are other tips on differences in phrasing:—

Wrong—"I was down this way and thought I'd drop in to see you."

Right—"I made this trip because I wanted to see you about—"

Wrong—"Do you understand what I mean?"

Right—"Am I making myself clear?"

Wrong—"You won't be sorry if you buy it."

Right—"You will always be glad you made this choice."

Wrong—"Sorry you are not willing to give my goods a trial."

Right—"Thanks for going over this with me. I'm sure we'll work together later on."

The first telephone advertisement, published in 1877 : The Proprietors of the Telephone, the invention of Alexander Graham Bell, are now prepared to furnish Telephones for the transmission of articulate speech through instruments not more than 20 miles apart. Conversation can be easily carried on after slight practice, and with the occasional repetition of a word or sentence. On first listening to the Telephone, though the sound is perfectly audible, the articulation seems to be indistinct ; but after a few trials the ear becomes accustomed to the peculiar sound and finds little difficulty in understanding the words.

* * *

King Theopompus of Sparta was one of the first rulers to foresee the danger of absolute monarchy. He established what we would call a Congress, and gave part of his great powers to this body—an act much appreciated by his people. But his wife upbraided him, saying : " You are giving away your sovereignty. The power you leave to your children will be less than that you inherited from your father."

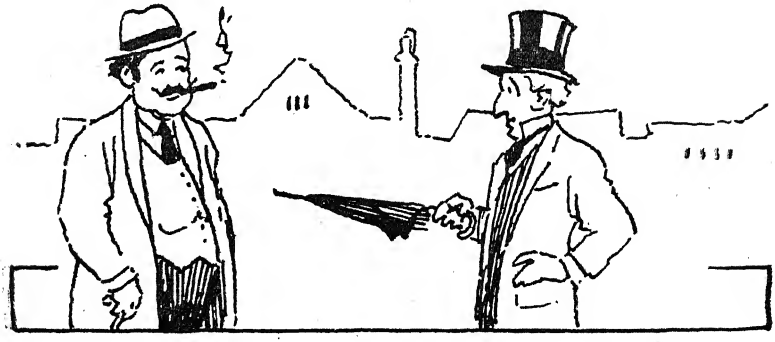
" No," replied the King, " it will be greater—for it will last longer."

* * *

Dr. Baron, the world-famous Hungarian surgeon, known for his sharp tongue and high fees, was approached one day by a wealthy industrialist who required an operation. He was informed that the surgeon's fee would be a thousand crowns.

" But that is too much ! " said the rich man.

" In that case," said Dr. Baron, " may I suggest that you go to Dr. X ? He will charge half my fee and you will not have to pay it. Your heirs will."



Our forefathers did without sugar until the thirteenth century, without coal fires until the fourteenth century, without buttered bread until the fifteenth century, without potatoes until the sixteenth, without coffee, tea and soap until the seventeenth, without pudding until the eighteenth, without gas, matches and electricity until the nineteenth, without canned goods until the twentieth, and we have had automobiles for only a few years . . .

Now, what was it you were complaining about ?

—*American propaganda notice.*

* * *

James Bradley, who discovered the aberration of light and the " nodding " of the earth's axis, was appointed Astronomer Royal in 1742.

One day Queen Wilhelmina visited the observatory at Greenwich. She graciously chatted with the astronomer for an hour, and noticing the frayed condition of his clothing, tactfully inquired as to the adequacy of his income.

Bradley informed her of the size of the honorarium paid to the Astronomer Royal—about Rs. 1,500 a year.

" But surely," the Queen exclaimed, " that is scarcely sufficient. I shall do my best immediately to see that the royal astronomer is better rewarded."

" Your Majesty," Bradley replied, " I beg you not to do that."

" But why ? " the Queen asked in perplexity.

" Because, Your Majesty, if you should make the position of royal astronomer at Greenwich profitable, I am afraid no scientist will ever get the position."

* * *

Punning is " the lowest form of humour," but for all its detractors it has a long history. Shakespeare used puns to amuse the low-brows and to lighten the tension of his dramas. In *Romeo and Juliet*, for example, Mercutio, who has been stabbed, expires with the pun : " Ask for me to-morrow, and you shall find me a grave man."

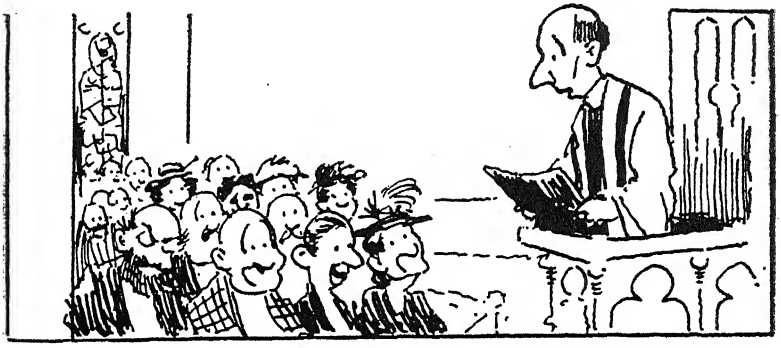
The best punsters have been poets. A pun plays with a word not only for its sense but for its sound—a good pun, has the trick of seeming both accidental and inevitable. When reproached for not writing more serious poetry, Thomas Hood replied : " If I would earn my livelihood I have to be a lively Hood."

Hood is credited with the immortal pun made on a famous romantic verse. To the lines : " The light that lies in women's eyes . . . " Hood added, " and lies and lies and lies ! "

Officials of a well-known aviation company formerly replied, when questioned if flights were scheduled for that day, " No, we are sorry, but the weather will not permit our flight this afternoon." Connotation : Air travel is hazardous.

Now, the answer has been changed to : " No, our flight has been cancelled because the weather is not up to our standards." Connotation : Safety ideals of the airline are high.

* * *



Advertisers have realized that a play on a word makes the product stick in the mind. A dry-cleaner put this sign in his window : " If your kids are dirty bring them in here."

Dr. William Spooner was the unconscious inventor of another kind of pun. One Sunday in 1870, during a college service in Oxford, he said, " We will now sing the hymn ' Kinquering Congs Their Titles Take ' ! " The congregation burst into laughter—and a new form of punning was created : the spoonerism. But before long the legend outgrew the fact ; the unfortunate preacher was supposed to have complained that he was tired of addressing " beery wenches," that it was " Kisstomary to cuss the bridge," that someone was " occupewing his pie," and that if things didn't improve he would leave Oxford by the " town drain." He was even (falsely) said to be the author of a gardening limerick the last line of which suggests : " To keep off the pests, let us spray."

Shakespeare and Bob Hope and the years between have not saved the pun from the scorn of its detractors. The reason for their condemnation is obvious : envy. But the groan conceals the true reaction of the listener : " I wish I had said that."

I wish I had been the first to think of the one about the dog who chased his tail trying to make both ends meet ; or the one about the girl who never had her ears pierced but often had them bored.

But my favourite hero is the mythical jester who annoyed the king by punning on every subject except his royal self—the king, said the jester, was not a subject. The exasperated monarch ordered his execution. As the poor fellow stood upon the gallows, a messenger arrived with the king's pardon, on one condition : that the jester promise never to commit another pun. Looking at the rope the jester smiled. "No noose is good noose."—LOUIS UNTERMEYER, condensed from "Good Housekeeping."

* * *

Tact is the art of convincing people that they know more than you.—ANON.

* * *

A cynic is a man who knows the price of everything and the value of nothing.—OSCAR WILDE.

* * *

A cynic is one who tells you the truth about your own motives.—RUSSELL GREEN.

* * *

A budget is a method of worrying before you spend instead of afterwards.—ANON.

* * *

Liberty is being free from the things we don't like in order to be slaves of the things we do like.—SIR ERNEST BENN.

* * *

I believe that genius is an infinite capacity for taking life by the scruff of the neck.—CHRISTOPHER QUILL.

* * *

Diplomacy is the art of letting someone have your way.—DANIELE VARE.

* * *

Romance is the absence of a woman : reality, her presence.

—*Ibid.*

* * *

"Finish every day and be done with it. You have done what you could ; some blunders and absurdities crept in—forget them as soon as you can. To-morrow is a new day . . . "—EMERSON.

* * *

Those who collect the significant documents of our age should not overlook the form on which Jan Masaryk, the famous Czech leader, applied for permission to enter the United States of America. In the space opposite "Race" he wrote "Human."

—*Everywoman.*

SEVEN WONDERS

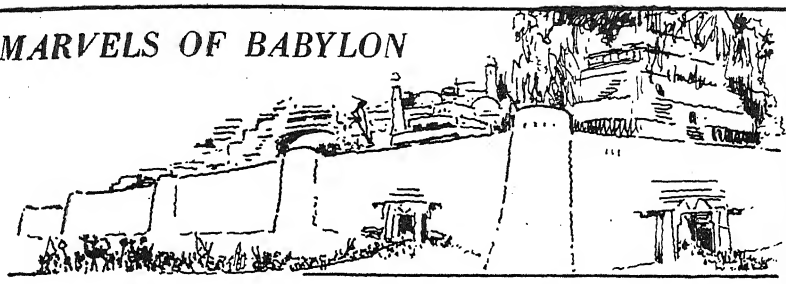
WHAT are the Seven Wonders of the ancient world? Their influence can be traced in the progress of man through the ages. Two have helped us in our scientific knowledge to-day.

In the Pyramids of Egypt, dating back to 3650 B.C., you see the most remarkable building skill the world has known. To build then the kings of Egypt employed a hundred thousand men for 20 years.

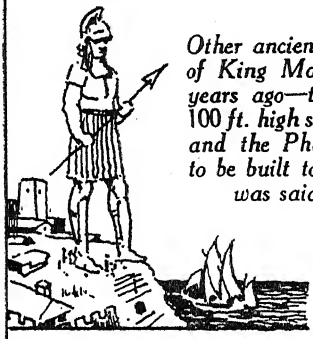
Second of the ancient wonders was the immense statue of the greatest of all the Olympian gods—Jupiter. This was done about 460 B.C. and was the work of the great sculptor Phidias. It was 40 ft. high and the huge figure was covered with a skin of pure gold.

To the Athenians' Goddess of Agriculture, Diana, was built a mighty temple at Ephesus where people worshipped to ensure a bountiful harvest. The temple had 127 marble columns each 60 ft. high.

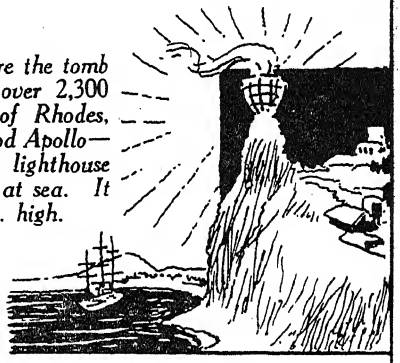
MARVELS OF BABYLON



BABYLON, Holy City of Western Asia, was another of the ancient world's wonders famous for its massive bastions and brass gates and its Hanging Gardens which rose in terraces 300 ft. towards the sky.



Other ancient wonders were the tomb of King Mausolus built over 2,300 years ago—the Colossus of Rhodes, 100 ft. high statue of the god Apollo—and the Pharos the first lighthouse to be built to guide ships at sea. It was said to be 450 ft. high.



The Pharos was an outstanding wonder in those very early days as a means of communication over great distances. It was built by Ptolemy II in the third century B.C. It stood against raging tempests for about 1,500 years and was finally destroyed during an earthquake.

Life at Sea

Attractive prospects for cadets of India's training ship Dufferin

JUST eleven years ago an interesting group stood on the bridge of a small steamer plying between Bombay and other west-coast ports. There was the master of the ship—a veteram Mohamedan sailor who had risen the hard way after decades of a seafaring life starting as an ordinary seaman. Arguing animatedly with him were two well set up young men in sports shirts and shorts who were worried because of the slow progress the ship was making and the time taken at several ports of call. Though not dressed in uniform, they were newly commissioned officers—in fact two of the first batch—of the infant Indian Air Force.

The observer could not but be struck by the contrast between the skipper and his passengers—the man qualified by years of experience and lessons learnt in the most difficult school of all facing two youths of promise starting in a very new profession with the advantages of as good a " send off " as Cranwell and the instructors of the Royal Air Force could give them. Incidentally, though the career of one of the pilot officers was cut short very early, the other of the pair has risen to an important position and has an odds-on chance of becoming India's first Air Marshal.

A second, and consequential thought that flashed through the mind of the observer standing on the bridge of that coastal ship in May 1934 was : " Twenty years hence the master who stands on the bridge of this ship may be a very different type of person. For by then there are bound to be some of the *Dufferin* boys in charge of ships and they will have many advantages the old skipper here lacks, apart from being able to stand by the side of officers of India's air force without suffering by comparison."

For just then the first graduates of the Indian Mercantile Marine Training Ship *Dufferin* were making their debut as midshipmen on various shipping lines plying along India's coast and even further afield. The old auxiliary cruiser and troopship, which had seen service in the Red Sea and Gulf of Aden and once been the Flagship of the Royal Indian Marine, had been turned into a training ship in 1927 and at the end of that year the first batch of teen-age cadets had been selected and admitted for a three-year course that would qualify them for sea-going careers

while at the same time giving them all the benefits of a good high school education. In the early thirties, when the scheme was still in its early stages, shipping companies and engineering workshops were rather slowly taking in old cadets from the training ship as apprentices in their cadres of executive and engineering officers. Since then the *Dufferin* training has won general recognition, over 700 cadets having been admitted to the ship by the end of 1944, and the number of applications received for coming vacancies in the new year was the highest on record. It might be said that India has started training the skippers—one might say commodores—of the great shipping lines which she may boast in the not very distant future.

The inauguration of the *Dufferin* scheme does not in any way imply that the prize posts in the Indian merchant navy are to become the monopoly of a selected group of middle class youths wearing the Dufferin tie. There is probably no training school in India with as high a ratio of scholarships and endowments to the number of pupils it can admit as the training ship boasts. Any boy of more than average intelligence, hailing from a seafaring community or living in or near a port, if he possesses a middle school education, can hope to get through the entrance examination and get one or more scholarships which will enable him to go right through with his training without straining the parental budget, however small that may be. Even boys from non-maritime provinces are eligible for several of the scholarships. An institution admitting about 50 boys each year and with over 30 scholarships to go round, preferably to the boys who need them, can fairly be described as democratic.

Nor must comparisons with the old salts who have in the past risen to command ships along the long and arduous path of years of experience be interpreted as implying that they are not dependable seamen, or fit for their commands. For the sea is a hard taskmaster and one that over a period of years does not fail to discover weaknesses of character or training. The hardened sailor who has risen to command of a ship has usually proved himself fit to be, if only for the duration of the voyage, monarch of his own little realm in a more real sense than a district officer is the ruler of his district. But the number of men fit for commands who can be produced the hard and long way is problematical and the future of India's merchant navy cannot depend on their emergence thirty or more years from now. What the country needs is to draw into the mercantile marine in large numbers and right now hundreds of young men—or rather boys—whose

characters can still be moulded by education and the discipline of a training ship to fit them for future responsibilities. Incidentally it will not hurt to equip them with a certain amount of education that may be of use if they are called upon to take ships into foreign parts and to deal with the intricacies of red tape as it arises, for instance, in passport and customs restrictions. For these purposes education up to at least a high school standard in such subjects as English, geography and other subjects is a decided asset.

The courses of study provided by the *Dufferin* are well calculated to attract bright boys of all classes and circumstances who feel that they are likely to be happy and to do well in the merchant navy. Every year an entrance examination is held at eight centres—important inland cities as well as seaports. To appear for this examination a boy must be between the ages of 13 years and 8 months and 16 years and he must have studied up to a class within three classes of matriculation. This is a standard which every boy will reach in the India of to-morrow, though not all will be able to pass an examination conducted through the medium of the English language. Unfortunately as English is a very necessary language for skippers of foreign-trade vessels, the ability to speak it and to appear for an examination in it must be a *sine qua non* of admission to positions of authority on ships going beyond India's shores. Candidates who pass the entrance test for the *Dufferin* are called to Bombay to appear before a selection board and go through medical and eyesight tests. Twenty-five candidates are chosen each year for the executive officers' and a like number for the engineer officers' course. Both courses are of three years duration.

During those years they get a training that would be of advantage to any boy, no matter how much his parents would be prepared to spend on putting him in an expensive school. They attend school classes conducted by a headmaster and his staff, while at the same time living and dressing like sailors on their ship, anchored in Bombay harbour, and submitting to the strict discipline of a sailor's life. In addition to the usual high school subjects, they have a few important extras—navigation, seamanship, meteorology, naval architecture and engineering for the executive cadets; and marine engineering for the engineers-to-be. The engines and boilers of the ship are most useful for practical training as also are the ship's diesel generators.

Though spending most of their time on the ship, the cadets get regular shore leave. In peacetime, when uniforms in Bombay were an unusual sight, one could always tell by the presence of parties of cadets in their neat white uniforms at cinemas and in the shopping centre that it was their Sunday off. Facilities for sport are as good as those of any Bombay school. Besides swimming, boating and deck games, the ship has its own playground ashore where they are taken at least four times a week. They are further given physical training and taught boxing, while they have also an indoor recreation room and gymnasium. Arrangements are made for outings and excursions and for an annual Easter camp.

The fee for this training, including board and lodging, is only Rs. 50 a month. Parents have in addition to provide the cadets with uniforms, clothes and a few extras. Many scholarships are awarded annually—six offered by the Government of India, three by the Government of Bengal, eight by the Scindia and Mogul lines, two by the Karachi Port Trust, one by the Karachi Municipality, three by the Madras University, one by the Madras Port Trust, three by the Rangoon Port Commissioners and two by the G. I. P. Railway Staff Benefit Fund. In addition the Bombay Port Trust offers two scholarships to cadets passing out from the ship and following a career at sea, while the Government of India offer 15 scholarships a year to engineering cadets passing out to help them during their apprenticeship period in a marine engineering workshop. Some of the scholarships are reserved for residents of particular areas, while the Port Trusts favour the sons of employees for the scholarships they offer, but generally the scholarships are all meant to help those who might not be able to pay their fees otherwise and any intelligent poor lad has every chance of getting through the *Dufferin* course without drawing too much on the family purse.

In order that middle class lads whose families favour college education may not be deterred from entering the *Dufferin*, practically all universities and institutes for higher education in India have agreed to regard the final examination of the training ship as equivalent to their matriculation. This is most important for more than one reason. In the first place the middle class which is traditionally conservative has to be weaned from its old prejudices in favour of sedentary callings and, by tempting boys to try a new type of school which may lead to a career at sea but which does not shut out the prospects of going to college later many will get the chance of learning the attractions of life aboard,

ship whose parents would not otherwise have allowed them to try for the *Dufferin*. Secondly there are lads who might have fancied themselves as future sea captains who will either find out for themselves that the sea is not their line or who will be disqualified on the grounds of say physical disabilities like bad eyesight not manifest when they first joined the training ship. It is something for them to know that they will have that universal passport to employment, a certificate accepted as equal to the matric. Actually the *Dufferin* final examination standard is higher than most school leaving examinations in India and most of the lads who get through it do join the merchant navy, the Indian Navy or some allied calling. Still the provision of that safeguard must have helped to draw many candidates of a type that would not ordinarily be allowed by their parents to participate in any novel experiment any more than they would be encouraged to run away from home and go to sea as cabin boys.

For most executive cadets the training ship course is followed by an apprenticeship at sea with one of the shipping lines operating along India's coasts or from Indian ports. Engineering cadets get their practical training in marine engineering workshops. Of those cadets of both categories who completed their training on the *Dufferin* before the war, well over half chose to join the mercantile marine and over a quarter the Royal Indian Navy, the Royal Indian Naval Reserve and such ancillary services to shipping as the Bengal Pilot Service—one of the best paid services—and the port trusts. The war has seen a very fair proportion entering the Royal Indian Navy and its Volunteer Reserve and it is a matter for special satisfaction for those who sponsored the *Dufferin* scheme 20 years ago that in time of war, and with plenty of scope for lucrative employment in other lines for all employable youths, the number of applicants for admission as cadets is as high as it has ever been while the serious risks of a seagoing career have not deterred cadets passing out from going to sea.

This is a good augury for the future. For in the past the traders of India sent their wares far afield to markets throughout the Middle and Far East. India was long famed for her ships and her sailors. They not only carried Indian goods but also Indian civilisation and culture as far as Java and China in the East and Egypt in the West. "Trade by sea carried on by the daring of the sailor has been the vanguard in the march of civilisation throughout the world," to quote from a speech made by Lord Wavell to the *Dufferin* cadets at their annual prizegiving in December 1944.

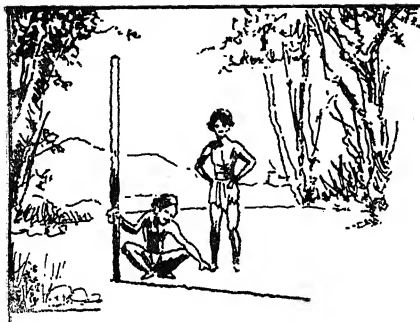
And so it was in India's heyday. The periods of decay have been periods when mercantile activities have been more or less at a standstill. During the past hundred years and more India, a dependent country, has practically ceased to have any merchant fleet of her own. How greatly her merchant fleet might be developed after the war was suggested by the Commerce Member of the Government of India in an address to the Policy Committee on Shipping which held its first meeting in Bombay at the end of 1944. India has probably a longer coast line than any country of the world except the U.S.A. and Australia, if one excludes the largely ice-bound coasts of Russia and Canada. She lies on one of the world's biggest trade routes. Yet in 1939 she had no more than 30 deep-sea ships with a total gross tonnage of 150,000. How weak she is has been shown most glaringly by her inability to find shipping to transport the food supplies she needed very badly in wartime.

In the future India's merchant fleet must strengthen its position to enable it to take much more of the coastal trade than its present share, estimated at 20 to 30 per cent. She must acquire a fair share of the trade between Eastern ports, particularly where Japanese lines used to operate previously, and she must also get a share of the trade between India and the West.

The first steps towards the big revival of India's sea trading tradition have been the inauguration of the *Dufferin* scheme and efforts to get Indian companies a fair share of the coastal trade. The war has seen the revival of a shipbuilding tradition, which will be carried on in the period of peace. But it is men, no less than ships, that make the merchant fleet. The lascars of ships that have carried on under threat of submarine attacks have proved their worth. And for positions of command, Indian lads from all parts of the country have gone forth from the *Dufferin* to prove their ability to revive the traditions of the great sea captains of long ago and also to show their worth as men.

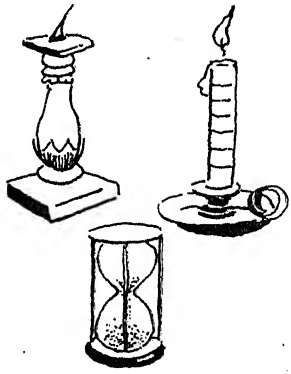
To quote once again from the address delivered by Lord Wavell to the cadets of the training ship: "I should say that the sea was the best practical examiner of character; any weakness, any hesitation, any lack of hardihood is found out and is punished, sooner or later, and almost always sooner. A hard testing life, but a man's life. Oak and triple brass must be round the heart of the man who goes to sea, said the Latin poet Horace. If he had been writing to-day he might have substituted teak and hardened steel."

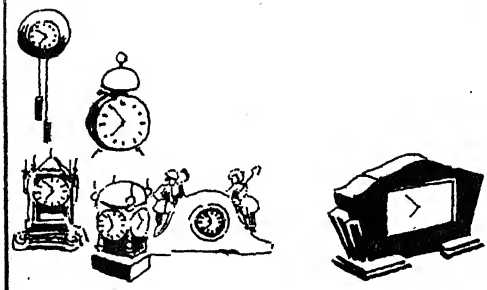
TIME—MARCHING ON

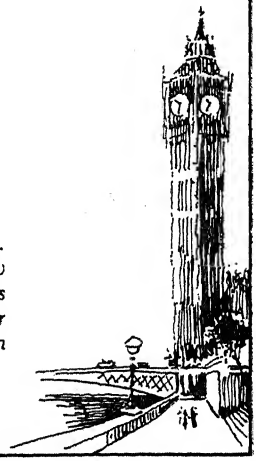


MARK the progress of science through the ages in the—nowadays—very complicated business of telling the right time. But in ancient days it was a very simple matter. Progress may have given us greater accuracy, but consider the simplicity of the old methods.

Shadows cast by a stick or tree measured time in very olden times. Then came such contraptions as the sundial, the sandglass, and later, the candle. Actual clocks with wheels and weights were made over 600 years ago. Most modern invention is the electric clock to give the people the right time all the time.







Probably the world's most famous clock is Big Ben. The chimes of the great Westminster bells are now carried all over the world by radio. Big Ben is really the name of the thirteen-ton bell which, ever since the first radio broadcast in 1923, has been sending out time signals all over the world.

India's Model Engineers

No fewer than eleven inventions have been based and developed on a model electric railway in Bombay.

MANY people consider model engineering and model making childish, and a waste of time, particularly when adults indulge in it, or show enthusiasm concerning it.

For many years model engineering has been taken quite seriously in Europe and America, and interest has grown to such an extent that properly organised societies have been formed, and are flourishing, while an industry with several firms well established, and with almost world-wide reputations operates on a very satisfactory basis. A visit to show rooms of one or other of these firms will not only convince the visitor of the popularity of the hobby; but will surprise him, for alongside bright and intelligent looking youths examining, discussing, and perhaps, purchasing models ranging from small railway signals to model transatlantic liners, will be found staid elderly men discussing in all seriousness, various technical details pertaining to models of all description, and with an enthusiasm sometimes greater than that of the youngsters.

In India the enthusiasm for models and model making has been growing for several years. The testimony for this growth is found in the fact that shops have gradually had to cater to an ever-increasing extent for a demand of models. A well-known firm in Bombay which has built up its business on radio sets, cinema projecting gear and refrigerators, secured the agency for an American firm of model makers just before the outbreak of war, and secured a surprisingly good business. The young Indian of these days is by no means behind his prototype of other countries, and is now asking for more and more advances to meet his growing enthusiasm, nor are his elders far behind in the matter.

An exhibition organised by the B. E. S. and T. Co., Ltd., in Bombay some eight years ago produced remarkable results in models submitted by their staff. These covered practically every field of activity from simple sets of doll's furniture to working models based on astronomical phenomena. In Bombay alone in

1940 there were no fewer than 13 working model railways of appreciable size. The owners, builders and enthusiasts responsible for these railways contacted each other and met in friendly circumstances of rivalry, competition, and mutual assistance and an attempt was made to form a model Engineering Association. Unfortunately the aims of the Association were confused with that of other hobbies such as fretwork, which cannot be said to be model making, although the art or craft is a useful adjunct of model making. The result of this misconception has been that model engineers in the strict sense of the word were reluctant to associate themselves with the project, and so, although it has functioned in a flourishing manner in its own particular sphere, it lacks the true appeal of model engineering.

Model making when taken up by a youth may be safely considered as a sure indication of a leaning to an engineering or industrial career, for although many a little boy has an ambition to be an engine driver, at some time or other in the first dozen years of his life, only a small proportion of that number will implement that early engineering ambition by trying to build an engine, a ship or a bridge. The parent may rest assured that if a boy evinces sufficient interest at an early age to make a mechanism, or a model, with his own hands, and evolves ways and means of doing so on his own initiative, it will be a waste of time and money to try and make a doctor or lawyer of him. If therefore a youth shows such an inclination, it is well to foster it so that the next stage may produce confirmatory evidence that the youthful ambition is well founded. This proof is forthcoming in the manifestation on the part of the youngster regarding his inclination to use the tools necessary. The correct handling of tools is a qualification which is inborn, it cannot be taught with any degree of success unless there is a natural aptitude for it. The next stage is accuracy and technique, for, given the inclination and the aptitude, success will be elusive if accuracy and technique are absent.

Accuracy is based on a keen power of observation aided by a retentive memory so that the youth is enabled to reproduce in miniature and in detail what he has seen. Technique is a peculiar capacity for readily finding ways and means of reproducing that miniature in detail. This technique is very often amusing, for it is surprising what queer objects and material can be usefully employed to produce in model form a faithful representation of the full sized object. For example, a tooth-pick with a couple of lines in ink drawn on its sides at one end will produce a

surprisingly accurate looking miniature billiard cue for a billiard room in a dolls' home.

Few people can understand the recreative effect of a hobby of this description. To the boy at school it offers the same, if not a greater attraction, as the field of sport. It is not every boy who can turn to sport and develop the quick mental response calling into action muscular movement which results in proficiency at the particular form of sport indulged in. The boy will often realise that he can show greater proficiency in the slower though sustained mental processes requisite in following an indoor hobby, and if that hobby is one requiring a certain amount of manual labour, even though it may be of a light nature, his mental and physical faculties are exercised, and as it is in the pursuit of ideals, other than those demanded by the routine of his educational studies, his hobby becomes a real recreation.

In the case of an adult the recreative effect is even greater, for it takes his mind entirely away from its usual channels of daily routine and, even if the branch of his model making is closely allied to his ordinary daily occupation, it offers a sufficiently different mental process to make it a recreation. The pleasure of achievement in both cases, has to be actually experienced to be understood. The pride of creative effort rewarded is just as great to the model maker as it is to the artist, sculptor, or musician.

The contribution that the model maker can make towards the betterment of his country is considerable. So far, the pleasurable aspect of model making has been considered. The more serious side is the use that is made of it by engineers and administrators in the ordinary day to day problems of life and government.

The model makes its greatest appeal by reason of the fact that it concentrates large, and perhaps a widely spread combination of circumstances into a small space, thus enabling a comprehensive survey to be made which would otherwise be almost impossible. Causes and effects can be observed with a convenience which robs observations of the actual circumstances of all the factors which might otherwise influence a scheme. Such is the value of models in normal times. In times of stress such as that created by war, the value of models is enhanced to a degree which cannot be estimated. For example a model prepared of a tract of country which is shortly to be subjected to an attack, when carefully studied and the various factors of cause and effect reproduced on it in miniature form may be the means of saving countless lives, the value of which can never be estimated.

Here in India there are several instances where the use of models has saved precious time in producing material and equipment so essential to victory. In one particular instance, training equipment of a special nature was required for use in the minimum of time. An engineer designer who indulged in the hobby of model making was approached. He worked on unorthodox lines. He did not prepare numerous drawings. He produced working models of his ideas built to a definite scale. These models were submitted to the experts who would have to use the equipment. They were able to operate the models, watch the results, in miniature, and so were in a position to decide whether the equipment offered was what they required. When the models were approved the full sized equipment was built from them. This could be done with assurance because the engineer model maker knew that if his tiny models with their greater factors of friction and larger percentages of allowances in the tiny details, worked, it was a foregone conclusion that the full size prototypes would also function successfully.

Now that there are signs and hopes that the end of the war is in sight, the work of reconstruction has to be faced. In India, agriculture and industry will be subjected to heavy programmes of development and improvement in order to raise the standard of living. Such development and improvement will create countless problems for the engineer and industrialist and the solution of these problems in many cases will depend on the effects and efficiency of the model maker.

The raising of the standard of living will demand better houses, better roads, better villages and cities, all of which will call for careful planning. There is no better way of considering this type of planning than by the use of models ; all the plans and drawings in the world will not be so convincing as models.

Better houses, villages and cities depend in a great measure on better sanitation. Now it will be very little use to provide the means of better sanitation if the people are not taught its proper use. Mass education will be necessary. The only successful system of education of this nature, particularly when the people are to a great extent illiterate, will be by visual means, that is by letting them see the cause and effect, and the only way of doing this will be by the use of models.

Model engineering has great value in creating and stimulating in youth creative skill and inventiveness. The use of models in the circumstances explained above will, of necessity, call for not the reproduction in miniature of existing objects and circumstances

so much as the introduction of new ideas. Here therefore we want, not the model maker who is content to copy, an existing house, bridge, irrigation scheme or mechanical appliance ; but the model maker who will produce, in concrete form his ideas for something better, in other words, we want the inventive model maker.

Every model maker is of necessity an inventor in some degree, for in making his models he has to devise ways and means of producing his results, it is therefore but a short step to be an inventor in the accepted sense of the word. There again the model maker scores, for he can try out his ideals and ideas at no great expense. He can modify and adopt to his heart's content following the old motto of " Try-Try and Try Again." This process produces a stimulating sense of inventive creation which should be fostered rather than ridiculed. Some of the world's greatest inventions had their birth in the model maker's brain. The first steam engine to run under its own power was in the form of a model which shocked some good church goers one Sabbath Day as they came out of church.

Coming nearer home, the dredging of the harbour and design of the Alexandra Dock in Bombay was based on observations made on a model of the harbour in which was reproduced all the varying factors of current and tide. The invention of a track recording car on an Indian railway which is said to be the most complete car of its kind in the world was based in its design entirely on a set of working models. And there is a model electric railway in Bombay on which no fewer than 11 inventions have been based and developed.

It is hoped therefore, after the reader has considered all the points put forward in these lines, that he or she, will not ridicule or criticise with contempt the model enthusiast, be he boy or man ; but will respect his enthusiasm by remembering that erratic though he may appear to be, he is or may be rendering easy the future application of some boon to mankind.

RIGHT NUMBERS

On a piece of paper write a certain number (1089) and put it in your pocket. Then ask a friend to write down any number of three different digits. Say he chooses—

587

1. Then ask him to reverse the number—

785

2. Substract the smaller from the larger number—

785
587

198

3. Reverse the result—

891

Add the results of 2 and 3.

198
891

What is the answer ? 1089

CAN YOU DO IT?

1. You are the driver of a train from Howrah to Delhi. It runs at 60 miles an hour and has fifteen stops. It reaches Delhi half an hour late. What's the driver's name ?

2. Can you throw a ball as hard as possible and make it come back to you without striking a wall or anything else ?

3. The Maharaja placed a bejewelled golden cup in the centre of a carpet and offered it as a gift to anyone who could pick it up without stepping on the carpet. How would you reach the cup ?

4. A well-known word—the first two letters signify a man, the first three a woman, the first four an outstanding man and the whole an outstanding woman. What is it ?

5. Can you drop a glass three feet without breaking it ?

6. Would you say 7 and 8 are 16 or 7 and 8 is 16 ?

(*Answers on page 122.*)

EAST'S GIFTS TO THE WEST

MANY of the things in modern everyday use are believed to be original products of the more industrially advanced countries of the west. But if you dip into history in search of origins you get some interesting results.

Where did the European and the American get his pyjamas —originally? From India!

And where did they get the utensils from which they eat? —From China.

They may not have their monsoons as we know them—but they all have their umbrellas, all the year round. The umbrella idea, came, of course, from India.

And the ancient Egyptians invented the process which gave early man those stiff foot coverings now known as boots and shoes.

There are a hundred and one other things in everyday Western life that owe their origin to the skill and inventiveness of the ancients of the East.

India's Aviation of the Future

". . . In which there is scope both for the University trained engineer and the man who has graduated through the workshops."

THE air transport plan which has been submitted to the Government of India provides the following system of daily passenger, freight and mail services radiating from Karachi and Calcutta, the main air ports of entry, and from Delhi the capital :—

1. Karachi-Bombay-Madras-Colombo.
2. Calcutta-Allahabad-Cawnpore-Delhi-Lahore-Peshawar-Kabul.
3. Delhi-Nagpur-Hyderabad-Madras.
4. Calcutta-Cuttack-Vizagapatam-Madras-Colombo.
5. Bombay-Nagpur-Calcutta.
6. Karachi-Jodhpur-Delhi.
7. Bombay-Ahmedabad-Delhi.
8. Calcutta-Akyab-Magwe-Rangoon.
9. Karachi-Quetta-Lahore.
10. Calcutta-Dacca-Sylhet-Dinjan.
11. Madras-Bangalore-Cochin.

These trunk services constitute the backbone of an all India air transport system. In parallel with them will grow many local services, and some of these may be assisted by Provincial or State Governments, to provide for local needs. Such services would be of limited value without the trunk services, but the successful establishment of the trunk services will be the surest step to the extension of air service to the smaller communities. The same is true of overseas air services, though it is unlikely that Indian operation of services overseas will await the complete establishment of the internal system. The limited objective of the immediate future is not the end, but the essential beginning, which will enable other development to be undertaken.

The initial post war air services will be mixed passenger, freight and mail services. There will then be insufficient special traffic to justify special services. Even before night flying is introduced, the time tables will be such that a traveller may leave

any of the principal cities and arrive at almost any place on the air routes (not all where changes are involved) before the evening of the same day. Night flying, which will be introduced when the air routes are equipped, will bring all places on the air routes within 18 hours of each other. Moreover most of the principal air journeys will be accomplished during the night, thus leaving the days free for business and greatly improving the mail service.

Sir Frederick Tymms, Director of Civil Aviation in India, whom it is desired to acknowledge as the authority for many of the statements in this article, has given a valuable guide to the wide scope of employment likely to be created by the development of post-war civil aviation in India.

It is a common belief that the aerodromes constructed for Air Force use during the war have provided India with all she needs for civil air routes after the war. While the advance has been immense, this is far from being the whole truth. Many of the war aerodromes will serve no useful purpose for civil aviation. Even so, those which are conveniently situated and the great improvement of existing civil aerodromes, particularly in the matter of runways, constitute a very large contribution to what is needed. Much more, however, is required for civil aerodromes and air routes than a system of runways. Temporary war-time buildings are not intended to have a post-war use, and they are unsuitably planned and situated for civil air transport. Economy of operation is an all important factor, and the dispersed planning of a military aerodrome has to be converted into the co-ordinated compact plan of a civil aerodrome. Airports and aerodromes are destined to be among the most important features of the life of cities of the future, and their planning calls for clear recognition of the importance of the responsibility we bear for the future. They must be planned with all possible prescience of future developments affecting the safety of air traffic and of the demands for comfort, convenience and speed of a high class of traffic; and at important cities they must be architecturally planned to be worthy of the city and the purpose they serve. While nothing elaborate is required at minor aerodromes, they too must be planned, constructed and maintained to be worthy of the new service, and not to share the all too common characteristic of public buildings and places in this country—unplanned, ill-constructed and withal dirty. Here is work for the architect and engineer!

Approximately 110 aerodromes have been scheduled as necessary in the first period of development, to equip the main air

routes, certain subsidiary routes and places of importance off these routes. Of these, four should be international aerodromes, capable of receiving world air traffic as well as internal air services. Karachi, Calcutta, Delhi and Bombay are the four cities, which the needs of air transport and the interests of this country dictate should be so equipped. It so happens that these will probably be the main bases for internal air services. These aerodromes need to be larger, with bigger runways, larger and more extensive hangars and workshops, more extensive administrative, control and traffic buildings—particularly passenger handling and servicing arrangements, including first class hotels attached to the aerodromes if not independently available. The remaining aerodromes range from major aerodromes at major cities, to intermediate and minor aerodromes (in some cases for emergency landing only). The majority of the aerodromes exist, but in some cases entirely new construction is required. The cost of the construction programme for the whole of India (including Indian States), in the first 10 years, is estimated at about Rs. $15\frac{1}{2}$ crores.

The programme is likely to employ a force of over 200 civil engineers as well as a skilled and unskilled labour force of thousands. Many specialist engineering problems are involved in aerodrome construction. Some 60 million square feet of new runway and pavement construction will be required to bring the selected aerodromes up to the standard aimed at. This new construction alone is equivalent to some 580 miles of first class road 20 feet wide. Some authorities expect the largest aircraft to need runways of 5,000 yards in length and 200 yards in width capable of supporting a static load of 100 lbs. to the square inch and of standing up to the dynamic shock loads of landing. This extreme case is imposed by trans-oceanic flight combined with other adverse conditions; and where geographical and other conditions do not impose it, considerations of safety and convenience dictate that the aircraft shall be operated in such conditions as to impose a less exacting requirement on aerodromes. Having regard to the type of operation required to give the best service on air routes serving India runways of from 2,500 to 3,500 by 100 yards are expected to meet the needs of the international aerodromes for a good many years. The length required at aerodromes for internal operations will vary from 2,000 yards down to 1,000 yards by 50 yards in width.

Three things yet are required to complete the air routes for air operation—the Meteorological Service, the Aeronautical Radio

Service and the Aerodrome (or Flight Control) Service. Each has to be much expanded from the pre-war standard, and the Radio Service has to be completely reorganised to bring it into line with technical development. The expanded meteorological service, with its multiplied forecast and observation stations and increased frequency of forecasts and weather reports for airmen, which has been organised by the Director-General of Observatories (Dr. Normand) to meet the wartime needs of the Air Forces, goes far to meet the needs of the post war civil air routes. In this service will be found greatly increased scope for the physicists turned out by the Universities. The necessity of secrecy with regard to much of the radio development, for the origination of which British scientists have been almost wholly responsible, and which it will be necessary to apply for the benefit of the air traveller of the future, makes it impracticable at this stage to give any indication of the form the Aeronautical Radio Services will take. Indeed, such is the wealth of new Radio devices to aid air navigation, which the war has produced, that no final decision can be taken until the technical study of the problem is more advanced. The civil aeronautical radio service for the Indian air routes will need to be much expanded. Some 50 stations are contemplated, including a research station. The service is likely to employ about 1,500 technicians, including engineers and operators. Finally, the Aerodrome Service, which is the co-ordinating link between the aircraft, the radio and meteorological services and the administrative services and is responsible for flight control and the administration of the aerodromes, will undergo expansion commensurate with the expansion of the air routes. The small body of 30 Aerodrome Officers, some of whom were trained abroad and others later in India, carried on all flight control both for civil and service aircraft for the first two years of the war. Post-war requirements will involve quadrupling this force and a corresponding increase in the varied technical staff employed under them for the operation of aerodrome equipment and other specialist work. Aerodrome Control Officers, ideally, should be men with wide flying experience, and the expansion of this service will provide employment for pilots and other air trained officers who retire from the Indian Air Force while many technically trained other ranks from the Air Force will find suitable employment in other grades of the aerodrome service.

Another necessary Government organisation is one of particular interest to engineers. All commercial aircraft operation is carried

out under Government supervision as regards safety, and the organisation responsible for aircraft airworthiness is the Aircraft Inspection Branch of the Civil Aviation Directorate. The air transport plan will necessitate expansion of the small but efficient organisation which exists. Aircraft engineers of the highest quality are required for this work, in which there is scope both for the University trained engineer and the man who has graduated through the workshops.

The planned expansion of air transport and air organisation and, much more, the expansion which will follow from the achievement of that plan, will necessitate expanded training organisations and will open the door for training on a wider basis than has hitherto existed in India. The training arrangements which will be desirable, and for which proposals are under consideration by Government, may be divided into four classes :—

(1) Spread of general knowledge of aviation in the secondary schools and colleges and among the educated public by lectures.
(2) Private flying—Flying Clubs and Gliding.
(3) Professional and trade training.
(4) University education and post-graduate research.

The time is ripe to make available to the youth of this country and to the enquiring public a balanced picture of what aviation means and is capable of doing. This can be done by the supply of material for lectures to the colleges and by arranging visiting lectures. This and the arranging of public lectures can best be achieved by local societies of influential and interested people, who can bring to bear an intimate knowledge of the life of the community and ensure that the movement has its roots in the people. Such societies must be linked together by a central organisation, which, in collaboration with the department of Civil Aviation, will be responsible for collecting and circulating material, films and slides. The Air League of the British Empire has done magnificent work of this kind, including the establishment of the Air Cadet Corps, and plans to extend its activities to other countries of the Commonwealth and Empire. India could with advantage accept its assistance in this work, which would lead to the establishment of training corps for keen youths and help them in the selection of a career, either in military or civil aviation. The prime object of the movement however is general education and not training for employment.

The flying club movement has come to stay, and after the war must be extended to the formation of gliding clubs. Flying

clubs make available facilities for learning and practising the art of flying, to all persons—male and female. They provide a medium for cheap flying practice for pilots on the reserve of the Air Force, and employment for trained instructors, engineers and mechanics. They are the most useful medium for mutual assistance of private owners of aircraft, and for the hire of aircraft for personal touring for business or pleasure by people who are unable to own their own aircraft. They should be the local centres for the development of sporting flying. They are necessary as local centres for the assistance and entertainment of air tourers from abroad and to promote air touring abroad by Indians. Air touring has proved in the past a powerful medium for promoting international friendship in a way which is not achieved even by regular air transport. It is destined to achieve much more. For the purpose of air touring it is desirable, if not essential, that the flying clubs should be linked by a central body such as the Aero Club of India and Burma which has performed useful work in the last 15 years, but which it is essential should be truly representative of the flying clubs—as they must represent it in their local region. The central body must in its turn be associated with the international body responsible for sporting flying and air touring, as the Aero Club of India and Burma has been associated with the Federation Aeronautique Internationale. A Provisional International Committee for Private and Sporting Flying has been set up in London by the initiative of the Royal Aero Club, to take up the work which the F.A.I. has been unable to do during war. India has not sufficient well-to-do and interested youths to justify an expectation that every city will have its flying club, but the spread of interest in flying by the war will have its effect, and there is no reason to doubt that the ten flying clubs will be doubled within five years. It is essential, however, that the flying clubs should be based on local initiative and interest. They can have no healthy existence and growth if they are dependent entirely on Government initiative ; though there is little reason to doubt that Government will be prepared to continue its policy of granting financial assistance to well founded clubs. The same is true of gliding, but, given this essential local initiative there is great scope for gliding in this country. Gliding provides a much cheaper introduction to the art of flying than the flying of power aircraft. It is akin to sailing ; it is both a sport and a medium for scientific study and is peculiarly suitable for the youth at college, providing a medium for both mechanical and flying training. The con-

struction of gliders can be suitably undertaken either in small units or in a factory, and provides one step towards the development of a new aircraft manufacturing industry. The satisfactory development of gliding necessitates a central body to co-ordinate activities and to establish and supervise standards, bearing in mind that gliding is not at present subject to Government supervision. India's climate provides conditions peculiarly suited to convection soaring, but her topography is not that of Europe, and hill soaring sites are not generally available. Gliding will have to be developed at aerodromes not heavily used for power flying.

To train technicians released from the Air Force in civil aviation systems, and to produce the flow of trained men which will be needed for the constant development of air transport and air routes, a professional school is required. Flying Clubs can give preliminary flying training and they provide a useful sorting out ground, but professional training needs a more highly developed and better equipped school, and this can only be provided by a central organisation. It has been proposed that a Civil Air Service Training School should be set up, in which there will be four main departments :—

Flying School	...	For Pilots and Navigators.
Engineering School	...	For Engineers and Mechanics.
Radio School	...	For Wireless Operators and Engineers.
Aerodrome School	...	For Aerodrome Officers and other technical Aerodrome staff.

Such a school will produce personnel both for the Government services and for air transport, flying clubs and other operations. It is essential that it should be organised on a first class technical basis. It will then, not only to a large extent obviate the need for technicians to go abroad for training, but will probably also attract students from neighbouring countries, not so well situated as India to establish their own schools.

In the past, in the absence of a substantial air transport industry, there was no justification for specialised university training in aeronautics ; it would only have accentuated the evils of overproduction of academically trained men. When the basic structure has been built, one may justifiably start on the roof. There will be a need for higher aeronautical training to produce the scientists needed for the aircraft manufacturing industry to come, and for the inspection and other technical departments of the Government administrative machine, as well as to provide all round education for the higher executives who will be responsible

for developing air transport and other operations. A start has been made by the Indian Institute of Science at Bangalore who, with the help of the Government of India have established a department of Aeronautics equipped with a wind tunnel and other apparatus. This activity will need to be extended. In the higher field of aeronautical research and advanced study, the equipment required for effective work is so elaborate and expensive that it is beyond the reach of most individual countries. Here collaborative effort can achieve the best results and proposals are under consideration for the establishment of a central British Commonwealth Aeronautical University, in which India will have an opportunity of participating. This educational structure should be rounded off by the establishment in all principal cities of India, of branches of a professional society for the promotion of technical and scientific knowledge and for the establishment of professional standards. The Royal Aeronautical Society has for some time past had arrangements for the holding of its examinations in India, and an increasing number of Indians is becoming qualified for membership and the higher grades. This activity will undoubtedly be extended after the war to the formation of branches in important cities, where there is sufficient interest and initiative.

Little or nothing has been said about aircraft manufacture. It is no doubt true that aircraft must be constructed before they can be used, but it is equally true, in current conditions, that any country which wishes to start manufacturing aircraft must first learn to use them : in other words must create a market. A new industry could not hope to compete in the export market with the aircraft manufacturing industries of America and Great Britain, nor indeed in the home market in India. That market, which will need a number of different types to meet varying needs, will be too small for some time to support an industry. Air Force requirements for individual types of aircraft are normally greater than civil and provide one of the best openings for the commencement of complete aircraft construction, just as military considerations provide one of the few valid reasons for pressing forward manufacture beyond its natural pace of development. We have two aircraft factories in India, which will provide the means of establishing a peace-time industry. The approach will be through repair, overhaul and servicing of aircraft, engines and equipment ; then, in association with an established designing manufacturer of types of aircraft commonly used in India and neighbouring countries, assembly and partial construction in this

country ; from this to the production of an indigenous design of a small aircraft, such as a trainer or tourer for which there is a common demand, and for which a design department will have been gradually built up.

ANSWERS TO THE

"INDIAN HORIZON"

INTELLIGENCE TESTS NEXT PAGE